71839

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1911.

No. 163

CEDAR RAPIDS GAS LIGHT COMPANY, PLAINTIFF IN ERROR,

vs.

THE CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, MAYOR, ET AL.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

FILED NOVEMBER 26, 1909.

(21,910.)

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1 In the Supreme Court of Iowa, September Term, 1908.

In Equity.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant,

vs.

THE CITY OF CEDAR RAPIDS, IOWA; GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen, and with the Mayor Constituting the Council of said City and H. S. Keffer, Recorder, Appellees.

Appeal from Linn District Court.

Hon. F. O. Ellison, Judge.

John N. Hughes and Grimm & Trewin, Attorneys for Appellant.
J. W. Good, J. W. Jamison and H. E. Spangler, and John M. Redmond, Attorneys for Appellees.

Appellant's Abstract of Record.

Due, timely and legal service of the within Abstract of Record is hereby acknowledged this — day of ——, 1908.

——— ———,
Attorneys for Appellees.

2 *Abstract of Record.*

On the 24th day of December, 1906, plaintiff filed in the Linn District Court the following:

Petition in Equity.

Plaintiff states:

Par. 1. That it is now and was during all the times hereinafter mentioned a corporation for pecuniary profit organized under the laws of the State of Iowa with its principal place of business in Cedar Rapids, Linn County, Iowa, and engaged in furnishing gas for domestic and other purposes to the inhabitants of said city.

Par. 2. That the City of Cedar Rapids is a municipal corporation organized under a special charter from the state of Iowa and operating under said special charter and the laws of Iowa applicable

to special charter cities. That the defendant, G. S. Lightner is mayor, and the defendants, C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, J. K. Starman and E. W. Winter are aldermen thereof, and with the mayor constitute the City Council of said City; and that H. S. Keffer is recorder of said city and by virtue of his office clerk of the said council.

Par. 3. That on the 17th day of November, 1871, the said city of Cedar Rapids by its mayor and council, duly passed, adopted and put in force by publication as required by law a certain ordinance, contract and franchise, the same being Ordinance No. 112, of said City, a copy of which is hereto attached marked "Exhibit A" and made a part hereof. That by said ordinance the said city granted to the plaintiff, its successors and assigns, the privi-
3 lege of supplying to the said City and the inhabitants thereof gas for domestic, lighting and other purposes. That on the 26th day of May, 1896, the said City of Cedar Rapids, by its council and mayor duly passed and adopted a certain other ordinance and franchise, being Ordinance No. 437, and being an amendment to Exhibit "A" hereof, and by publication put the same in force, a copy of which ordinance is hereto attached marked "Exhibit B" and made a part hereof.

That in due time and as required by said ordinances and each of them, they were duly and properly accepted by the plaintiff and the acceptance duly filed whereby they became valid and binding for the purposes for which they were enacted.

That at the time the said Ordinance No. 112 was enacted there was no law or statute of the State of Iowa prohibiting the council of cities from granting a perpetual franchise to supply the inhabitants with gas or entering into a contract with any person, firm or corporation, fixing the rates that should be charged private consumers, for gas, but the defendant, the City of Cedar Rapids, possessed the right and power, to authorize plaintiff to charge and collect from each person supplied with gas such rent and rates as might be agreed upon between plaintiff, and the City of Cedar Rapids. That in pursuance of said power, and for the purpose of inducing plaintiff to establish a system of gas works and a suitable gas plant, the said City of Cedar Rapids did in the adoption and enactment of said Ordinance No. 112 passed on the 17th day of November, 1871, confer upon the plaintiff, its successors and assigns, a perpetual franchise, contract and right to occupy the streets of said city and to supply the inhabitants thereof with gas for
4 domestic and other purposes, and did contract and agree, with the plaintiff that it should have the right and authority to charge and collect certain rates, tolls and charges named in and designated by the terms and provisions of said ordinance and franchise. That the said ordinance, franchise and contract and the rights conferred upon plaintiff thereby have never been by plaintiff waived, modified or surrendered, except as to the modification of prices to be charged, accepted and assented to by plaintiff in its

acceptance of the terms and provisions of Ordinance No. 437, passed in 1896. That the plaintiff has never in any way waived or surrendered any of the rights and privileges obtained by its original franchise, and plaintiff alleges that there is now a valid and subsisting contract by and between the City of Cedar Rapids and the plaintiff whereby the plaintiff is authorized and empowered to charge and collect the following rates, contained in said ordinance, and stated in the following language, to-wit:

"That in consideration of the privilege herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more feet per month the discount shall be 45 cents per thousand feet for all purposes, if paid on the same terms and conditions as above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or for the city offices, the price shall be 10 cents per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

5 And said contract has never been abrogated or cancelled by law or act of the parties.

Par. 4. That in pursuance of the authority conferred upon the plaintiff by the terms of said ordinance and in discharge of the obligations imposed upon it thereby, and relying upon the same as a contract between the parties, the plaintiff built, erected, established, maintained and operated, and still maintains and operates, a system of gas works within the city of Cedar Rapids, expending thereon and therein large sums of money and have from time to time made large additions thereto, and betterments thereof, and has purchased real estate for the location of said plant, and in accordance with the terms and conditions of said ordinances, has been for many years engaged and is still engaged in furnishing gas to large numbers of the residents and citizens of said city and to persons in the vicinity thereof.

Par. 5. That, notwithstanding, the said contract authorizing and empowering the plaintiff to charge and collect rates as in the said ordinances designated, the plaintiff has from time to time reduced the price of gas to private consumers and other persons as fast as the efficiency of the service and the extensions of the plant would warrant and has never received to exceed a fair per cent income upon its investment. That the present rates charged by plaintiff, and which have been in force for more than eighteen months last passed are as follows, to-wit: For each one thousand cubic feet of gas consumed $1.25 with the discount to the consumer of ten cents per thousand cubic feet if paid on or before the tenth day of the succeeding month, and the said rates did not pay, during the last fiscal year more than 6 per cent, on the actual value of the

6 investment in said plant, after the operating expenses, renewals and other fixed charges were paid, and will not dur-

ing the current year pay to the owners of said plant more than a like amount, and a reasonable estimate of the future earnings of the plant for the next three fiscal years, under the present rates, and after meeting the operating expenses and fixed charges, is not to exceed six (6) per cent on the actual and reasonable value of the capital invested.

That the amount invested by plaintiff in the purchase, building, and construction of its plant is $267,500.00 which amount does not include that part of the gas works used to supply the patrons of plaintiff living in the town of Kenwood Park and the City of Marion.

That the actual appraised value of plaintiff's physical properties in the City of Cedar Rapids is $358,000.00 and this amount does not include any of the plant used for the supplying of the patrons in the town of Kenwood Park or City of Marion, and does not include anything for going value or good will of plaintiff's business nor does it include any sum as a value of plaintiff's franchise. That in addition to plaintiff's physical properties as herein stated it is required to keep invested and in use a working capital of twenty-five thousand dollars, making in all an actual investment of approximately Four Hundred Thousand Dollars, which plaintiff has in use in the service of its patrons in the City of Cedar Rapids and upon which it is entitled to earn dividends after its expenses and fixed charges, are paid.

7 That plaintiff's gross income for the year 1906, was as follows:

For sale of gas	$95,290.94
From all other sources including coke and tar	17,387.58
Making a total income of	$112,678.52

That plaintiff's actual and necessary fixed charges were for the year 1906, as follows:

For manufacture of gas	$51,009.31
Office expenses and salaries	7,795.70
Taxes and interest	6,849.03
Setting of stoves and meters	5,943.83
Repairs and renewals, not extensions	13,000.00
Total expenses	$94,597.87
Leaving a net income of	$18,080.65

That under the rates provided in the ordinance complained of the plaintiff would have been required to furnish gas to its patrons in Cedar Rapids at a reduction of twenty-five cents a thousand feet or .226 per cent of its price for gas at an actual loss to it self and its stockholders for the year 1906, of more than $3,452.10. That

for the year 1906 plaintiff had no damage suits, claims or extra charges to pay, and no court costs or expenses, and for that reason its fixed charges and running expenses for the year 1906 were lower than can reasonably be expected for the year 1907.

That plaintiff is subject from time to time to large expense in litigation and settlement of damage claims by leakage of gas, and other damages and while the expenses for the year 1906, includes no such items yet plaintiff is constantly subject to such hazards.

8 Plaintiff further says that coal is the largest item of plaintiff's expense and the price of coal has raised since plaintiff made its contracts for the year 1906, and that the coal for 1907, to be used in the manufacture of gas will cost plaintiff more than ten per cent in advance of the price paid for the year 1906, or more than four thousand dollars above what a like amount of coal cost for said year.

That for the year 1906 plaintiff had large amounts of purifying materials on hand and left over from the prior years and the cost of manufacturing during said year was less, on account of said fact, by many hundred dollars, and plaintiff alleges the facts to be that the cost of manufacturing in the year 1907 a like amount of gas as was manufactured in 1906 will cost plaintiff fully six thousand dollars more than it cost in the year 1906.

Par. 6. Nevertheless, the City of Cedar Rapids by its mayor and by its aldermen constituting its city council, and on the 21st day of December, 1906, attempted to pass and did in form pass a certain ordinance, a copy of which is hereto attached, marked "Exhibit C" and made a part hereof, which ordinance has been signed and approved by the defendant, G. S. Lightner, as mayor of said city, and which by its terms purports to fix the price that the plaintiff shall charge and receive for gas furnished to its consumers for all purposes at Ninety (90) Cents per one thousand cubic feet and by the terms of which, and by the design and intention of the defendants will go in force and effect on the 1st day of January, 1907, and will by the said defendants be attempted to be enforced as an ordinance of said city, unless defendants be restrained and enjoined from so doing.

9 Par. 7. That plaintiff further states that said ordinance, passed December 21, 1906, and attempting to reduce the rates to be charged by plaintiff is void and of no effect as against the plaintiff for the following among other reasons:

(*a*) It proposes and attempts to fix rates at which plaintiff shall be required to furnish gas to its patrons and customers, which rate is a reduction of more than 25 per cent of the present rates charged and received by plaintiff from such patrons and customers, which present rates are fixed by contract between the plaintiff and the defendant, the City of Cedar Rapids, as to gas furnished by plaintiff to such patrons and consumers of gas respectively, and which said present rates as fixed by contract are in all cases reasonable and just and not in excess of those named in the ordinance granting to plain-

tiff its franchise and amendments thereto, and the defendants have no power or authority to pass any ordinance or to put any ordinance in force that will affect in any way the rates established and agreed upon in said contract.

(*b*) That the said proposed ordinance fixing rates for gas passed December 21, 1906, if put in force and enforced, will at the rates therein specified, work a reduction of more than 25 per cent of plaintiff's gross income and earnings from its patrons and consumers of gas and will cause and require the plaintiff to operate its said plant and works at a loss to its self and to its stockholders and will deprive the plaintiff of a reasonable income, and of any income upon the capital and money invested therein and the said ordinance is unreasonable, unjust, oppressive and ought not to be enforced.

10 (*c*) The proposed ordinance passed by the defendants as above set forth, on the 21st day of December, 1906, fixing rates to be charged by plaintiff, is in violation of Section 1, of the Fourteenth Amendment to the Constitution of the United States, in that, if enforced, it will deprive plaintiff of the equal protection of the law, and of its property without due process of law and without compensation therefor, by depriving plaintiff of earnings sufficient to pay dividends or compensation upon its investment, to its said stockholders or otherwise, as hereinbefore stated and also as hereinafter stated and set forth; and said ordinance passed December 21, 1906, if enforced is in violation of Section 10 of Article 1, of the Constitution of the United States, in that it impairs the obligation of existing contracts between plaintiff and defendant, the City of Cedar Rapids, as hereinbefore set forth, and is in violation of Sections 18 and 21 of Article One (1) of the Constitution of the State of Iowa, prohibiting the taking of private property for public use without compensation therefor first being made by due process of law and prohibiting any law or ordinance of any city impairing the obligation of contracts.

Par. 8. That the enforcement of said ordinance attempting to fix rates, and the attempting to put the same in force, will produce great and irreparable injury to the plaintiff and will involve it in a multiplicity of suits and litigations, and greatly harass and injure it in the transaction of its business and affairs, and it is without adequate remedy at law and can only obtain full and adequate relief by and through this equitable suit and proceedings.

Wherefore, plaintiff prays that a temporary writ of injunction may be granted and issued directed to the defendants herein

11 and to their agents, restraining the said defendants and their agents from causing, authorizing or permitting the enforcement of said Ordinance No. 752, passed December 21, 1906, with the name of G. S. Lightner, Mayor, attached, and from passing or publishing any other such ordinance purporting to regulate the rates to be charged by plaintiff, and from in any manner attempting to put such ordinance in force or to enforce the same, either by legal process, writ or otherwise and restraining and enjoining the defendant, H. S. Keffer, as recorder of said city from recording or publish-

ing the same. And that said ordinance passed December 21, 1906, and set out herein as "Exhibit A" be set aside, by decree of this court and declared null and void. That upon final hearing the temporary injunction above prayed may be made perpetual, and that the plaintiff may have such other, further and different relief as is consistent with equity and good conscience, together with judgment against the defendant- for the costs of this suit.

JOHN N. HUGHES,
Attorney for Plaintiff.

(Duly verified.)

"EXHIBIT A" OF PETITION IN EQUITY.

An Ordinance to Provide for Lighting the City of Cedar Rapids with Gas.

Be It Ordained by the City Council of the City of Cedar Rapids:

SEC. 1. That for the purpose of encouraging and promoting the introduction of gas into the city at reasonable rates W. H. Whitta and his associates acting under the name and title of W. H. Whitta & Co. be and are vested with the exclusive privilege for the
12 term of twenty years from the passage of this ordinance of using the streets and alleys of this city and all streets and alleys that may hereafter be added for the purpose of laying down in said streets and alleys, pipes for the conveyance of gas in and through said city, for the use of said city and its inhabitants.

(Sec. 2. Refers to opening of streets and is immaterial to the issues herein.)

SEC. 3. That in consideration of the privileges granted to the company aforesaid, they shall furnish the citizens with gas at a rate not exceeding Five (5) Dollars, per thousand cubic feet, until the consumers shall reach two hundred (200) when the price shall be reduced to four dollars and fifty cents ($4.50) per thousand cubic feet. When the number of consumers shall reach four hundred (400) then the price shall be reduced to a price not exceeding four (4) dollars per thousand cubic feet, and so remain until the expiration of this grant, provided that if any discovery or improvements be made in the preparation of gas from coal or other material, either fluid or solid, by which the cost of making gas will be materially diminished and the same shall be adopted in other principal cities of the country, then in such case the company aforesaid shall introduce such discovery or improvement in said City of Cedar Rapids, and make such reductions in the price of gas as shall be effected by such discovery or improvement.

(Sec. 4. Refers to street lamps and is immaterial to the issues herein.)

(Sec. 5. Refers to when the plant shall be in operation and is immaterial to the issues herein.)

(Secs. 6 and 7 relate to extension of mains and are immaterial to the issues herein.)

13 SEC. 8. That it is hereby guaranteed on the part of said city that the said W. H. Whitta & Co., and assigns shall at the expiration of the privilege herein granted, have equal rights and privileges with any other gas company that may be formed in the City of Cedar Rapids.

Passed November 17, 1871.

T. Z. COOK, *Mayor.*

"EXHIBIT B" OF PETITION IN EQUITY.

Ordinance No. 427.

An Ordinance Granting a Renewal of the Franchise to the Cedar Rapids Gas Light Company, Providing for the Furnishing of Gas to the City of Cedar Rapids, Linn County, Iowa, and the Inhabitants Thereof.

Be It Ordained by the City Council of the City of Cedar Rapids, Iowa:

SEC. 1. That the Cedar Rapids Gas Light Company, a corporation duly organized and acting under the corporate laws of the state of Iowa, be, and the same is hereby vested with the privilege for the term of nineteen years, eleven months and twenty-five days from and after the passage of this ordinance to use the streets, avenues and alleys of said city, and all streets, avenues, and alleys that may hereafter be added thereto, for the purpose of laying down in said streets, avenues and alleys, pipes for the conveyance of gas in and through said city for the use of said city and its inhabitants, provided always, that said gas pipes, when so laid, shall not in any manner interfere with the drainage of said city, or the necessary construction of sewers or under-ground ways for the conveyance of water, or with any other improvement the city may make upon or in said

14 streets, avenues or alleys.

(Sec. 2 relates to opening streets and is immaterial to the issues herein.)

SEC. 3. That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more cubic feet per month the discount shall be 45 cents per thousand cubic feet for all purposes, if paid on the same terms and conditions above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city offices the price shall be 10 cents per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds.

SEC. 4. That the privileges herein granted in the preceding sec-

tions are made upon the condition that said gas company shall at all times, unavoidable accidents only excepted, hold itself in readiness to furnish and shall furnish all gas required by said city and the inhabitants thereof, and shall at all times fully insure, indemnify and save harmless the said City of Cedar Rapids from all loss or damage of any kind which may be sustained by any person by reason of defective, negligent or imperfect closing of all openings made by it in said streets, avenues, or alleys, and shall permanently maintain good, complete and substantial gas works, equal to the best in any city of the same or less population in the State of Iowa, and shall furnish to the city and the inhabitants thereof as good
15 a quality of gas as that furnished by any other gas company in the State of Iowa, and shall at all times conform with, submit to, and carry out any ordinance now in force or that may hereafter be enacted not inconsistent herewith, for regulating or controlling the use of streets, avenues and alleys, by said company, and said city shall at all times have the right for a failure on the part of said company to comply substantially with all the provisions of the foregoing sections, to forfeit this franchise and repeal this ordinance.

SEC. 5. It is hereby guaranteed on the part of said city that the said Cedar Rapids Gas Light Company and its successors shall, at the expiration of the franchise herein granted, have equal rights and privileges as to renewal with any other gas company that may be formed in said City of Cedar Rapids during the term of this franchise or at the expiration thereof.

SEC. 7. That, within thirty days after the lawful passage of this ordinance, the Cedar Rapids Gas Light Company shall file with the recorder of Cedar Rapids, Iowa, its written acceptance of the conditions herein set forth, and shall also pay all expenses arising or growing out of the passage of this ordinance and its publication.

SEC. 8. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed only so far as they affect this ordinance.

Passed May 26, 1896.

(Duly signed and recorded.)

16 "EXHIBIT C" OF PETITION IN EQUITY.

Ordinance No. 752.

An Ordinance Regulating the Rates to Be Charged for Gas and Providing the Penalty for the Violation Thereof.

Be It Ordained by the City Council of the City of Cedar Rapids, Iowa:

SEC. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c.) per thousand feet therefor, and no person, firm

or corporation, shall charge, exact or receive in excess of ninety cents (90c.) per thousand feet for gas supplied by them to any inhabitant of said city.

SEC. 2. Any person, firm or corporation, violating any of the provisions of this ordinance shall, upon conviction thereof, be punished by fine of not less than Ten Dollars ($10.00) or more than One Hundred Dollars ($100.00).

SEC. 3. This ordinance shall be effective from and after January 1, 1907.

SEC. 4. All ordinances or parts of ordinances in conflict herewith, are hereby repealed.

Passed this 21st day of December, A. D., 1906.

G. S. LIGHTNER, *Mayor.*

Attest:

H. S. KEFFER, *Recorder.*

That on the 26th day of April, 1907, the defendants filed in said cause the following:

17 *Answer of Defendants.*

Comes now the defendants, above named, and for answer to plaintiff's petition, they respectfully state:

They admit the allegations contained in Paragraphs One and Two of plaintiff's petition. They admit that on the 17th day of November, 1871, the City council of the City of Cedar Rapids, duly passed a certain ordinance, being Ordinance No. 112. Admit that Exhibit "A" attached to and make a part of plaintiff's petition is a true copy thereof. They admit that, by the terms of said ordinance, plaintiff, its successors and assigns, was granted the privileges of supplying the inhabitants of said city with gas. The defendants admit that the city council of the said city duly passed and adopted a certain other ordinance, being Ordinance No. 437; admit that Exhibit "B" attached to and made a part of plaintiff's petition, is a true copy thereof.

The defendants admit that plaintiff's successors and assigns duly accepted the ordinance passed on the 17th day of November, 1871, and that plaintiff accepted the Ordinance No. 437, passed by said city council on the 26th day of May, 1896. They admit that plaintiff's assignors, after the passage of said Ordinance No. 112, built, erected, established and maintained a gas plant in the City of Cedar Rapids, and that since plaintiff acquired said plant, it has maintained and operated a system of gas works within the City of Cedar Rapids, and is now engaged in manufacturing and distributing gas as alleged.

Defendant- admits that on the 21st day of December, 1906, the City Council of the City of Cedar Rapids passed a certain
18 ordinance, being Ordinance No. 752. Admits that the copy attached to plaintiff's petition, marked Exhibit "C" is a true

copy thereof and admits that said ordinance became effective January 1, 1907.

And the defendants deny all other allegations contained in said petition. They deny that the franchise granted to the plaintiff granted *them* a perpetual franchise, and allege that by the terms of said franchise the same expired twenty (20) years after the date of the passage thereof by the city council of said city.

Defendants deny that the ordinance passed on December 21, 1906, reducing the price to be charged for gas, to ninety cents (90c.) per thousand cubic feet is unreasonable, and deny that the enforcement of said ordinance would deprive plaintiff of its property without due process of law, and deny that the returns under said ordinance would not yield a fair return on the value of its said plant; and defendant especially deny that the physical property of the plaintiff used in the manufacture and distribution of gas in said city is of the actual valuation of Three Hundred Sixty-Eight Thousand ($368,000.00) Dollars and deny that plaintiffs *have* more than Four Hundred Thousand ($400,000.00) Dollars actually invested in its said plant.

Further answering said petition, the defendants allege that the ordinance passed by the city council of the City of Cedar Rapids, on December 21, 1906, being No. 752, and fixing the price to be charged for gas within said city, at ninety (90c.) cents per thousand cubic feet, is reasonable; that the actual value of the physical property of the plaintiff used in the manufacture and distribution of gas in the City of Cedar Rapids will not, as defendants are informed and believe, exceed Two Hundred Thousand ($200,000.00)
19 Dollars; that the actual cost of manufacturing gas in the holder, in the City of Cedar Rapids, is not to exceed thirty-five (35c.) cents per thousand cubic feet; that the actual cost of distributing gas in the City of Cedar Rapids, based upon the present consumption thereof in said city, including maintenance and office expenses, will not exceed twenty (20c.) cents per thousand cubic feet; that by intelligent and economical management gas can be produced and distributed in the City of Cedar Rapids by plaintiff's said gas works at ninety (90c.) cents per thousand cubic feet and pay a fair return on the actual value of said works in addition to the reasonable and necessary expense of operating, including necessary outlays for maintenance.

Wherefore, the defendants pray that plaintiff's petition be dismissed.

JAMES W. GOOD,
JAMISON & SMYTH,
H. E. SPANGLER,
Attorneys for Defendants.

(Duly verified.)

Bill of Exceptions.

On the 14th day of November, 1907, this cause came on for trial and was tried to the court, Hon. F. O. Ellison, sole judge presiding, and upon the trial the following proceedings were had, to-wit:

It is agreed that this cause shall be tried in the Federal Court Room in the City of Cedar Rapids, Iowa, in Linn County.

Evidence of Plaintiff.

EDWARD G. PRATT, sworn, upon Direct Examination testified as follows:

20 I reside in Chicago; am forty-nine years of age; by occupation I am a gas engineer, which term is supposed to mean that I am competent to build and operate gas works and gas property.

My first experience in operating gas works was in 1876, at Newton and Watertown, Mass.; I started as street lamp cleaner, then at lighting street lamps, later as office boy, attending to complaints, moving and setting meters, changing purifiers and other such work. The two towns had about thirty-five thousand people. I was there about two years, then went to Providence, R. I., as night clerk, for one year, then as night foreman, for two years, and day foreman two years.

As night clerk my duties were to read the photometer, to watch the holders, to take off and put on weights to the governor that regulates the street pressure. As night foreman I had general supervision of the night gang at the manufacturing plant, my duties as day foreman were the same as night foreman, during the day, with a larger force of men.

From Providence I went to Newport as assistant superintendent and in that capacity I had charge of the street department laying of mains and services and superintending of setting and removing meters, the shop gang and all work incident to distribution of gas. From Newport I went to North Attleboro as manager of the Gas Company, and had general supervision of the entire plant, manufacturing, distribution and office work. After four years I went to Des Moines.

For the first four years at Des Moines I was manager of the Capital City Gas Light Co., and the Capital City Electric
21 Light Co., and the Thompson-Huston Electric Light and Power Co., after I was president and manager. I was with the Des Moines company sixteen years; then I went to Milwaukee as vice president and general manager of the Milwaukee Gas Light Co., and was there three years.

While at Newport I laid twenty-five miles of mains; and in Des Moines, about sixty miles. In Milwaukee the estimates for all new work including mains came to me for official approval. During the time I was in Des Moines and Milwaukee I studied and kept informed on the cost of laying mains and cost of the work and labor connected with installing gas plants. During my management at Des Moines, we practically rebuilt the works, including three sets of water gas apparatus, boilers, benches, scrubbers, purifiers and gas holders, and I became acquainted with the cost of installing the different machinery going to make up the gas plant.

I have, during my career as gas company manager and officer made a special study of gas machinery, with reference to its cost, installation, operation, effectiveness and economy in use and its depreciation while in use. I have also kept posted in reference to the improvement of various kinds of gas machinery, and I know the prices and values of the same. Since I have been engaged in the business of Expert Gas Engineer, since leaving the Milwaukee company, I have been studying, planning, and valuing gas works and properties for other companies.

I have made a complete schedule of the physical property of the Cedar Rapids Gas Light Company and have placed a valuation upon the same.

I also became acquainted with the labor in connection with
22 the installing of gas machinery. I was general manager of the company in Milwaukee. The local representative of the company. I presided at meetings of the board of directors, and the entire property, its supervision, financing, management in every detail was under my supervision and the heads of the different departments were under me, and I kept posted on the cost of laying mains and the work and labor connected with the installation of the plant. From Milwaukee I went to Detroit as vice president and general manager of the Detroit City Gas Company, the plant being owned by the same people as the one at Milwaukee. I was in Detroit one year and then went to Chicago and opened an office for myself as consulting engineer.

While in Des Moines, I made a study of the cost of machinery and construction in general by keeping posted as to the cost of apparatus, cost of erection, making estimates of the cost of new parts and estimates of repairs. At Milwaukee I also kept informed as to the prices of machinery and during that three years we completed the property—the best and most up-to-date gas works in the country. Most of the work at Milwaukee was designed and some buildings under way when I went there, the officers of the company being determined to build the best works that could be built; a great deal of time was spent visiting other cities and the engineer was sent to England to investigate the best and most improved methods of manufacturing gas and from the results of these investigations the works were designed and built, and I think today they are the best gas works in this country, and during the time they were under construction I made a study of the prices of machinery, mains, cost of laying, cost of laying mains under paving. Since 1876 I have been continually connected with the operation of gas works until 1906.

23 I have appraised several gas works and plants for the purpose of arriving at their present value. About twelve years ago I valued the Ottumwa plant, recently I valued the works of Freeport, Illinois, the Kankakee, Illinois, works and those at Spokane, and a partial valuation of the Rockford works. I also made a valuation of the Des Moines works in 1895, when there was a controversy as to what were reasonable rates in Des Moines and the

value of the physical properties was the question in issue in that case.

I have examined the plant of the Cedar Rapids Gas Light Company and the distribution system so far as it could be made by an examination of the emptying of the mains and have prepared some rough sketches for the purpose of explaining in as fair a way as possible the operation of the plant but these charts have no application to plaintiff's plant only in a general way to illustrate the kind of machinery. The plant is a combination of coal gas and carbureted water gas.

The works are located on the Cedar river, the river running toward the south along the west side of the property, on the east side of the works is First street; on the north end is Seventh avenue, works extending from Seventh to Eighth avenue and across Eighth avenue to a point 120 feet distant, the works are shown on Exhibit No. 1. I consider this ground admirably situated for a gas works inasmuch as it has the river on one side, into which drainage can be emptied and has the railroad on the other side from which coal can be delivered into the coal sheds. The buildings, with the exception of the purifying building and coal shed and new holder which are practically new, have been in use for a number of years, but are still well adapted to the use to which they are put.

24 To describe the buildings I would begin with No. 1, which is the meter shop and storage extending to No. 2, which is another storage building with the coal shed in which coal is stored.

Attached to the coal shed and forming part of it being one wall, is the retort house (or No. 3) building, in which the coal gas benches have been erected, which is the primary apparatus in which gas is produced. Further along in the retort building, No. 4 is the carbureted water gas apparatus. Convenient to that is a coal space sufficient to furnish a supply of coal to the boilers, which are located in room 6. Room 9, the exhauster or engine room, is occupied by scrubbers, condensers and ammonia apparatus. Room 7 is the station meter room in which is located a meter for measuring the gas that is manufactured. Adjoining the meter room is the scale house in which is located platform scales for weighing all material going into the works and all materials coming out.

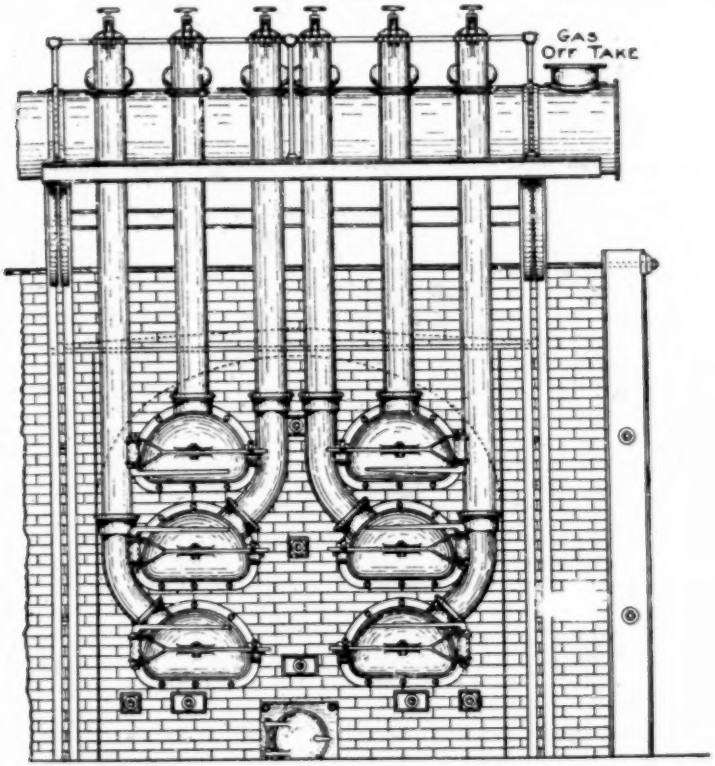
Building No. 11, is the purifying building in which is located apparatus for purifying gas. No. 12 is a pit or house in which is located the pumps for pumping water from the river to the works. No. 13 is a coke shed, a building where coke is stored, that is for sale.

No. 14 is a 100,000 c. f. gas holder, which is now used as a relief holder in conjunction with the water gas apparatus; No. 2 is another holder 25,000 c. f. capacity, which is dismantled so far as any use in the storage of gas is concerned, but is used for storing of oil, for manufacturing water gas; No. 16 is a stable where the company keeps its horses. No. 17 is a storage holder having a capacity of 500,000 c. f. No. 18 is a small building in which a governor is

located which regulates automatically the pressure delivered
25 from the holder 18, to the mains and service pipes of the consumers. No. 19 is the oil tank used also with the water gas set and 20 is the ammonia tank, which is used for storage of ammoniacal liquor.

The unit of manufacture of coal gas is the retort, which is indicated by "A" series of retorts.

"A."



FRONT ELEVATION

GAS MACHINERY Co.

26 In this diagram nine retorts are seen in a series and each series is indicated as a bench. At the Cedar Rapids Gas Light Company's plant they have benches of 9's and benches of 6's. Those in one inclosure heated by one furnace are designated as 6's or 9's, according to the number of retorts heated by one furnace. In the retort house "C" represents the floor in which the operating charge of the retort is conducted. Below the floor is a space of sufficient depth so that men can work in this basement for the purpose of cleaning the fires and also sufficient space for furnace of sufficient magnitude to heat

the retorts. The fire is all below the operating floors and usually is burning coke. That is to say the coke is drawn from the retorts after the gas has been extracted from the coal, and shoveled into the furnace and by that means the retorts are raised to a very high temperature. The length of these retorts extending back is about ten feet and their width about 36 inches, and height about 16 inches; owing to the intensity of the heat necessary to heat these retorts to the proper degree to carbonize a sufficient quantity of coal, all these retorts are made of fire brick.

To start up a bench requires a period of from two to three weeks and great care has to be taken in drying out the bench before heating, to bring it to the proper degree of heat slowly and gradually so as not to crack any retorts or pipes or flues in connection therewith.

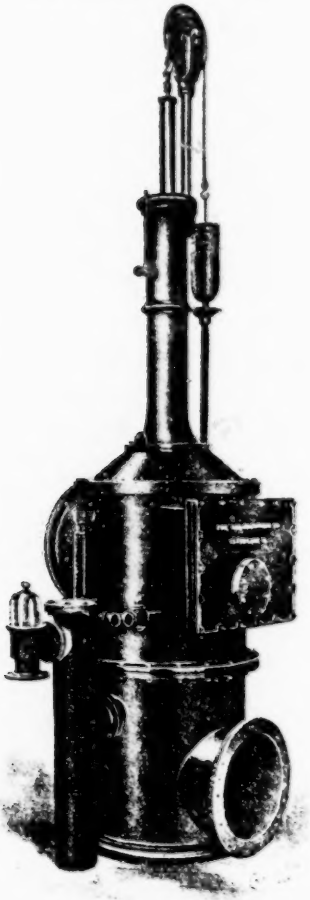
The construction of these furnaces and benches is a combination of scientific principle much more so than ordinary steam boiler or a house furnace is. The heat supplies the oxygen and the combustion of the coal takes place under the furnace. If that were not so
27 there would be a great deal of smoke, a product of combustion, coming out below.

In the firing and manipulating of the coal bench the highest stage of efficiency has been reached. The heat circulates all around through the retorts. When the retort is in a condition to receive its first charge of coal it is about 1,800 to 2,000 degrees Fahrenheit.

In front of the retort is a cast iron mouth piece to which is screwed what is known as a self-fitting lid; that is to say that when the charge of coal has been put in the retorts, this lid is closed by a motion of the wrists and the lever is thrown over and locks and bolts, and hermetically seals the retort. A retort the size used in plaintiff will take from 300 to 425 pounds of coal each charge and by each charge I mean as much coal as the heat of this retort will corbonize or remove the gas from. In other words charges of coal are introduced into the retorts every four hours and removed in the shape of coke.

After the coal has been deposited in these retorts and the lid closed, the gas passes up the stand-pipes, shown on "A" and over the bridge pipe at the top and down the dip pipe into the hydraulic main, which is shown in "A." There is enough water runs into that main so that the dip pipe contains water preventing the gas from going out and the liquor in the hydraulic main acts as a kind of value. After the operation of the plant for a few days the water is displaced by thin tar and liquor from the process of manufacturing gas. The gas when it starts in from the retort up the stand pipe and over the bridge pipe and down the dip pipe into the hydraulic main is nothing more than smoke. If you tap the stand pipe at that period there is nothing more than smoke and while they heat these retorts to a
28 very high temperature, it is necessary to reduce the temperature gradually as nearly as possible to the temperature of 60 degrees in order to get the gas but for distribution. These diagrams show in a sort of kindergarten way, the process of manufacturing gas. For instance there is the tar extractor, the idea being that tar and ammoniacal liquor is carried in with the gas and the tar and liquor are separated as quickly as it can be done. It is an apparatus that subjects the gas to friction, a great deal of friction on its passage and this friction that the gas is subject to in this apparatus deposits some of the tar. The diagram "B" shows a tar extractor.

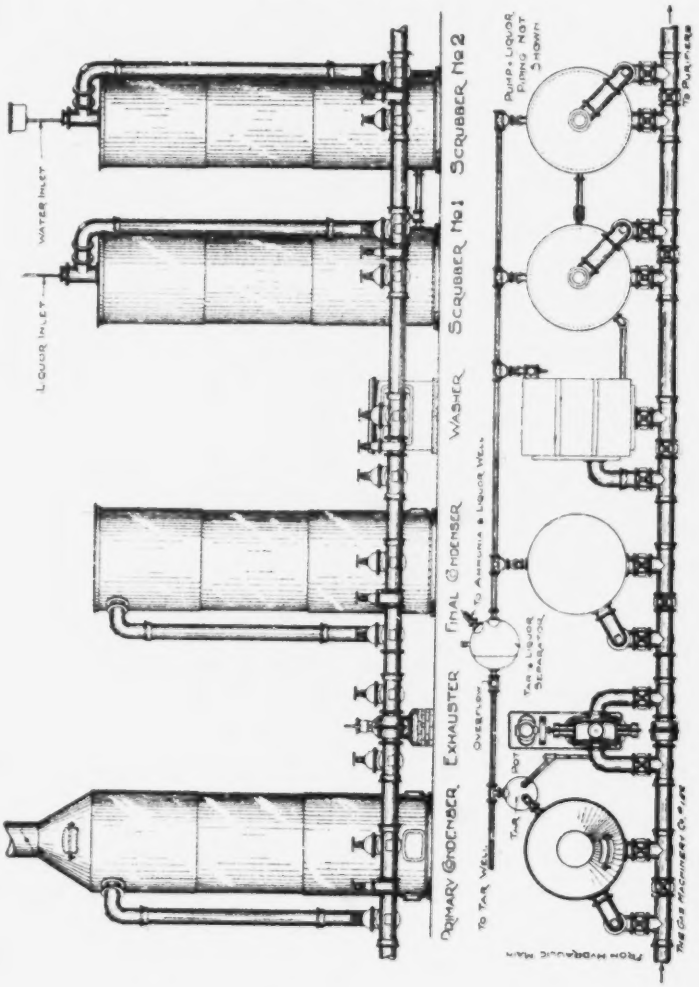
DIAGRAM "B."



The exhauster is constructed of heavy cast iron inside of which revolves pedals, the revolving of which creates suction in the retorts in which the coal has been deposited and draws the gas off from the retorts, pre-

venting any back pressure and receives the gas from the retorts as fast as it is carbonized. A diagram of the exhausting, condensing, washing and scrubbing machinery is given in Diagram "D."

DIAGRAM "D."

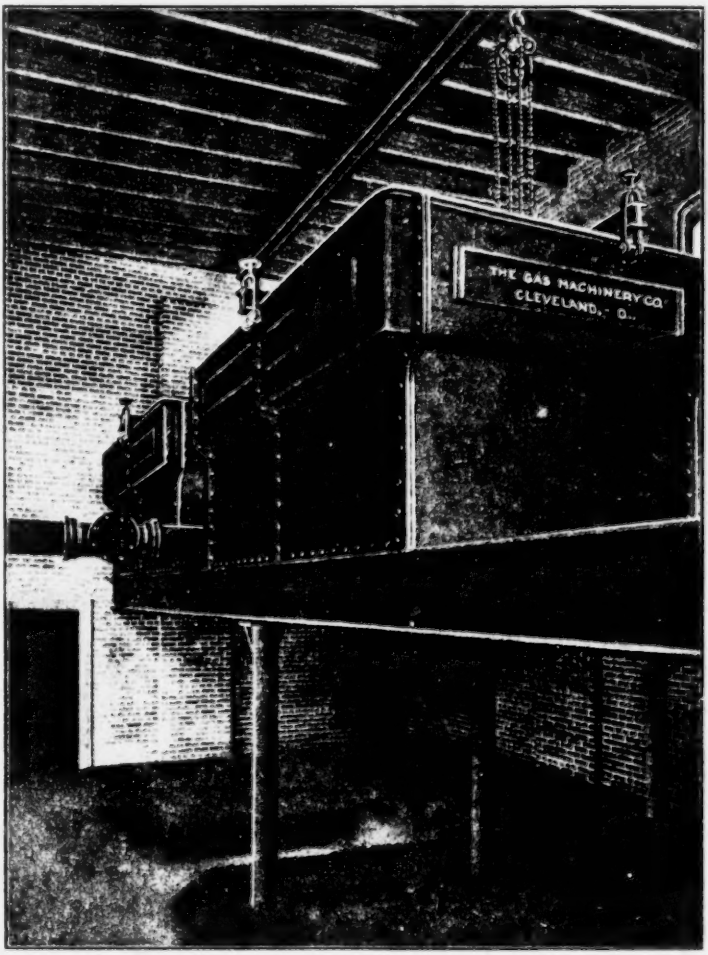


A scrubber is a cylindrical vessel. Its capacity depends upon the amount of work it is called upon to do and the requirements of the works where it is located. It may be six feet in diameter, and sixteen feet high or eight feet in diameter and twenty feet high, or any other dimensions corresponding to the amount of gas scrubbed. The gas comes from the exhauster and enters the scrubber at the bottom. Inside the scrubber are placed at intervals perforated boards. On these boards may be placed any material, shavings, scrap tin, brush or coke or anything that will subject the gas to as much friction over the surface as possible, and the object from now on is to reduce the temperature of the gas as slowly as possible. Instant cooling is injurious to the gas by reason of the deposit of naphthaline or anything else that may be deposited in the pipes and choke them up. Adjacent to the scrubber is the spreaders; water trickles down on these boards through the shavings or coke, the gas coming up from the opposite direction meeting; the water serves not only to continue to reduce the temperature of the gas but to deposit tar, and it also assist in the removal of ammonia, and it is from here that we get some of our ammoniacal liquor. This tar drops down to the drain pipes, the receptacle for it at this point, the tar and ammonia not yet being separated.

The next apparatus is the condenser, which represents a hollow shell, or cylinder, of the same dimensions as the other in which are placed upright tubes. The gas enters the condenser at the top, whereas it enters the scrubber at the bottom, and passes down on the inside of tubes. On the outside of the tubes, if it is desired to reduce the temperature more rapidly, water may be used and usually is used so that the tubes are surrounded by water. Many works have what is known as mechanical scrubbers, the mechanism of which effects the gas and

water, the object being to further remove the ammoniacal liquor. Ammonia is a product in the carbonization of coal and represents money, though of no use for burning as gas.

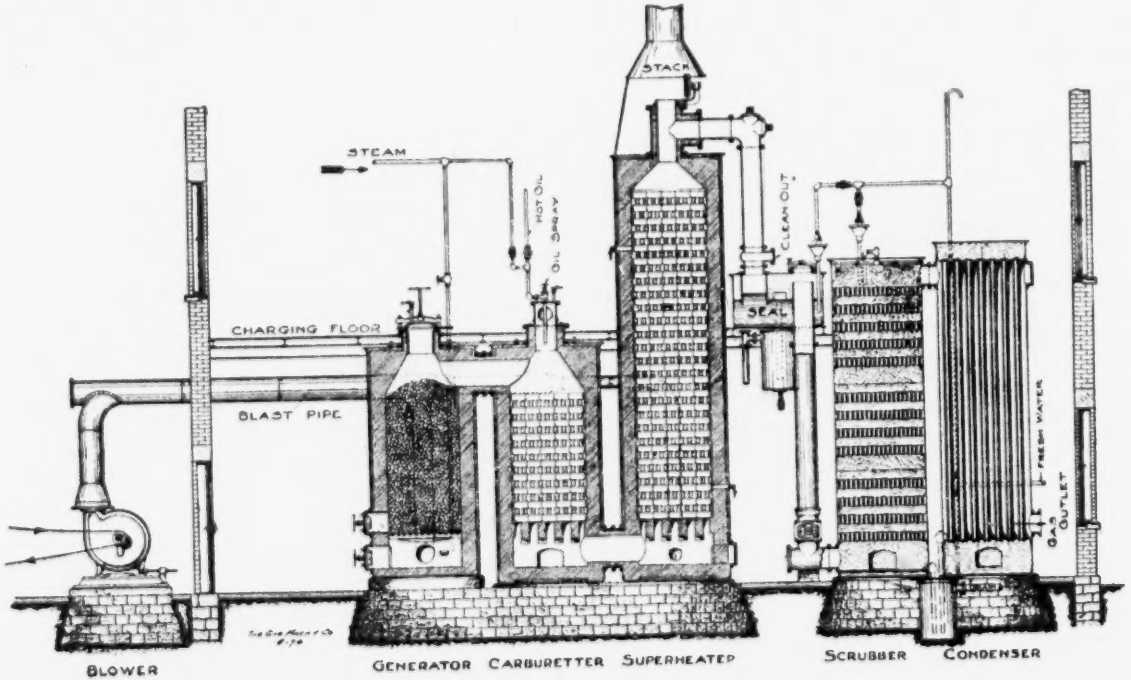
Exhibit 4 represents the purifying box.



These boxes are usually in series of 2s or 4s. In most gas works they are in 4s and the boxes of plaintiff are sixteen or twenty feet square. These boxes have movable lids that are raised and pushed away from the box as they are filled with materials to the depth of three or four feet, known as oxide of iron, which is a material that has affinity for sulphur. It is made of shavings, iron rust, copperas, sal ammonia and sometimes a little slack lime. This material after it has taken up so much sulphur compounds will do no more work, is removed and exposed to the air and become renewed and can be used over again until all the compounds have been entirely exhausted in the purification of gas. The gas enters at the bottom of the purifying box and spreads out over the entire bottom of the surface of this oxide and finally oozes slowly, because there is so much oxide it cannot go fast.

One box at the ordinary gas works does not remove all sulphur compounds, therefore it requires two or three and sometimes a fourth as a reserve in case either of the boxes may become clogged; any of the boxes can be thrown in or out of commission.

I return now to the manufacture of carbureted water gas. The machinery is marked Exhibit "2-B."

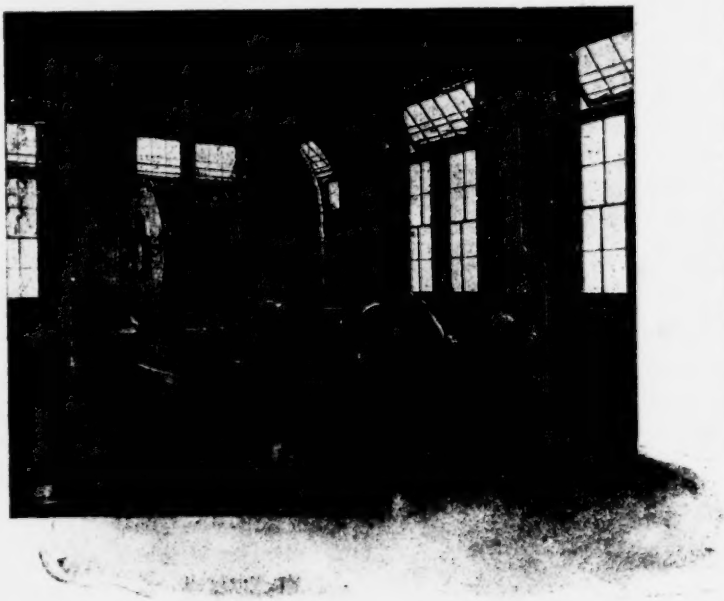

STACK
STEAM
HOT OIL
OIL SPRAY
CLEAN OUT
SEAL
CHARGING FLOOR
BLAST PIPE
FRESH WATER
GAS OUTLET
BLOWER
GENERATOR
CARBURETTER
SUPERHEATER
SCRUBBER
CONDENSER

In this exhibit the cylindrical figure marked "A" is termed a generator. It is made of different dimensions according to the quantity of gas required to be made. It may be six, eight, ten or eleven feet in diameter, these are the sizes in which they are made. It consists of carbureter, superheater, wash box, blower, blast pipe and the steam entering the generator.

When the operator is ready for starting, a fire is built on the grate bars by means of natural draft going up through the bars. This fire is finally kindled by addition of coal and is built up until the fire or the incondescent coke or coal occupies two-thirds of the capacity of the generator. The carbureter is filled with fire brick, when the fire in the generator has been built up to a certain point the engine and blower are started, and the air is passed through the blast pipe into the carbureter generator or superheater being regulated by means of valves operated by the water gas maker. In other words the maker can so regulate the heat that he can carry 1600 or 2000 pounds; about and in the superheater attached to the side of the shelves are slides through which the operator can look to see the relative degree of heat he is carrying and the color of the heat indicates to him the practical working temperature.

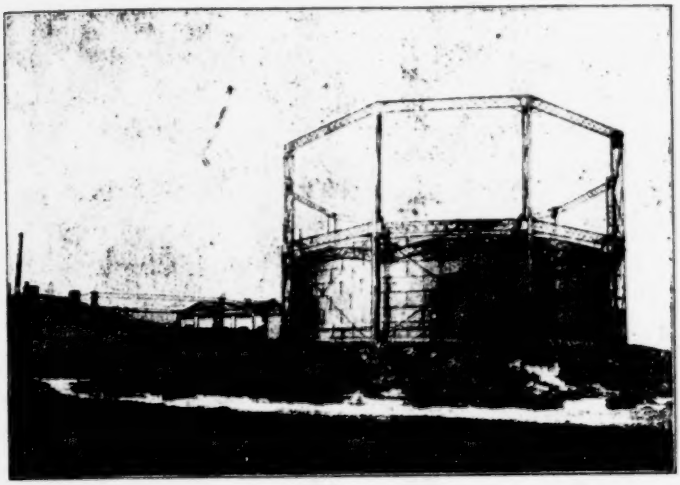
The water gas is conducted into the relief holder because it is made so fast that it is impossible to carry it through the different cooling processes as is done in coal gas. It is carried into this relief holder so that it can cool. It has not been cooled very much except in the evaporation, which is to say the exhauster. The exhauster has connected with it a pipe from the relief holder and at this point the water gas mixes with the coal gas and together the two gases pass from the exhauster,

through the condenser and purifier to the meter. The Exhibit 5, is the Station Meter and Blowers.



The construction of this meter is such that the friction and pressure of the gas causes the mechanism to revolve and the speed depends upon the rapidity with which the gas passes through. A line represents the water line and in order to have a correct registration of the meter the water must be kept at just the right height. The necessity of keeping this station meter in condition or as nearly so as possible is apparent because it is here at this meter the total of the leakage is arrived at. From the meter the gas passes into the storage holder, Exhibit Six. The holder is simply an inverted cup or vessel, in

a larger cup or vessel of water. The water seals the gas and keeps it from escaping.



The number of men required in the operation of the benches of retorts depends upon how many benches are used. In any gas works having but one bench, it would require a larger proportion than if there were ten. Ordinarily it would require but one with the assistance of a man to bring in coal and take out the coke.

I made an examination of the property of the Cedar Rapids Gas Light Co., for the purpose of making an estimate of the present value of the same. I examined it sometime last February. Besides the real estate heretofore described by me the plaintiff has property across the railroad tracks from the works, described as Lots 1, 2, 3, 4, 5, in Block 9, Original Town. It is to the east directly across the street from the property where the works are located, and was purchased in anticipation of future needs as the company has no land upon which to make

extensions and as a necessity in case of the further extension of the works. The company has no other ground that I know of upon which to erect another holder, and the time is not far distant when Cedar Rapids will need another gas holder and they have no other property than that I have described, and the next holder will have to be double the capacity of the one they now have. In the building of gas works or extending them it is important to keep all your apparatus as near to the works as possible. It is not practical to scatter your works over the town, therefore, it is very wise and precautious to have land on which you can make your extensions. I will say that this was a very wise purchase, not in the sense of a necessity because you can go anywhere and build a gas holder, but it is certainly a wise precaution and I think it a proper expenditure of money.

For the purpose of valuation I have divided the land into three parcels, the first I designate as "A," which takes in all the land bounded by the railroad track, Eighth avenue, Cedar river and Seventh avenue, and I have valued it at $15,000. "B" all the ground south of Eighth avenue, $5,000. "C" all the land in Block 9. I placed a valuation on this of $10,000.

In arriving at the value of the real estate I took into consideration the convenience and nearness of this land to the business center of the city and its peculiar adaptation for location of gas works. I did not talk with real estate men or property holders about valuations but exercised my own judgment as I thought the value of such a piece of ground for these purposes would be.

The witness here produces a paper which contains valuation of the properties of the plaintiff and has the same marked Exhibit No. 46. The same being as follows:

39 EXHIBIT No. 46.

Physical Property of the Cedar Rapids Gas Light Company, Cedar Rapids, Iowa.

LAND. (A) The works are located in Fractional Block 9, Lots 1, 2, 3, 4 and 5, Original Cedar Rapids; and are bounded by Seventh avenue on the north, First street on the east, Eighth avenue on the south, and the Cedar river on the west. The dimensions of this piece of ground is 420 feet long by 140 feet deep, and is irregular in shape, and width, owing to the course of the river on the west side of property.

(B) The land upon which the new holder is located is south of that described above and is separated by an 80 foot street (Eighth avenue), and is bounded as follows: On the north by Eighth avenue, on the east by First street, on the south by Ninth avenue, and on the west by the river. This land is described as Lots 1 and 2 in Fractional Block 10, Original Cedar Rapids, and is 120 feet long by about 140 feet deep.

(C) The company recently acquired and owns Block 9, Lots 1, 2, 3, 4 and 5, of Original Cedar Rapids. This property is to the east and directly across the street from the land upon which the works proper is located and was purchased in anticipation of future needs, as the company has no land upon which to make future extensions of the character that will be required. At present there are some tenement houses on these lots which the company rents.

40 BUILDINGS. The buildings and structures occupying the above (A) mentioned ground space, and used by the company in the conduct of its business are as follows:

(1) SHOP BUILDING. (50x20x19 feet), is of brick, with corrugated iron roof and is used for shop purposes, the repair and storage of meters, etc.

(2) STORE ROOM. (37x26x19 feet), is of brick, with corrugated iron roof on iron trusses. Is used for general storage purposes, such as retorts, brick, fire brick blocks, fire clay, cement, special fittings, etc.

(3) COAL SHED OR STORE. (77x50 feet); the roof is supported by 22 8-inch I beams, 30 feet long, set in two (2) feet of concrete; corrugated iron roof. The sides are planked with 3 inch plank that are held in place by the I beams and are removable at will, to facilitate the unloading of coal. The total capacity of this store is about 2,000 tons. There is a railroad siding upon two sides of the building, so that cars can be unloaded from either side at will.

(4) RETORT HOUSE. (120x36 feet), is of brick with 19 foot trusses; slate room having 10 24 inch iron ventilators. There is a basement with about 8 foot head room under one-half of this building. Corrugated iron floor.

Room contains three benches of 9 retorts each, constructed with the full depth furnaces of the Parker-Russell type. These benches are complete with hydraulic main stand pipes, mouth pieces, self

sealing lids, and retorts 16x28 in. x 9 ft. Also 3 benches of 6 retorts each constructed with so-called half depth furnaces of the
41 La Clede type, complete with hydraulic main, stand pipes, mouth pieces, self sealing lids, and retorts 14x26 in. x 9 ft. These benches have not been used since they were last refilled, and are therefore, practically as good as new. They are the La Clede construction, and are held in reserve to be used whenever repairs shall be necessary to any of the benches of 9s. Also (1) water gas apparatus, 6 feet in diameter, complete with generator, carbureter and superheater, together with engine and blower, and such other accessories as are required in the operation of a water gas apparatus. This apparatus, though somewhat antiquated in point of detail, is believed to have a daily producing capacity of the modern water gas machine of 5 feet in diameter.

There is enough additional space in this room for a modern 8 foot 6 inch water gas apparatus.

(5) COAL ROOM. This is the space referred to above in which a new water gas set is to be placed, and which is really a part of the retort house, but is now used as the receptacle for boiler fuel.

(6) BOILER HOUSE. (22x27x19 feet, is of brick with gravel roof, and contains 2 16 foot by 72 inch horizontal tubular boilers, the capacity of which is about 125 H. P. each. These boilers though second hand are practically as good as new. They are equipped with a steel stack 40 inches in diameter x 60 feet high.

(7) METER AND OFFICE ROOM. (36x20x19 feet), is of brick with shingle roof. Contains one 9x9 foot station meter, with 16 inch by-pass connections. Also some office furniture.

(8) SCRUBBER AND CONDENSER ROOM. (38x32x23 feet), including basement, the floor of which is cement concrete. This
42 room contains the scrubbing and condensing apparatus and will be enumerated later on.

(9) ENGINE ROOM. (28x32x19 feet), is of brick, with wooden trusses and shingle roof, contains the engines, exhausters, compressors, and station meter.

(11) PURIFYING BUILDING. (50x60x30 feet), is of brick, wooden trusses, gravel roof, concrete floor in basement, wooden floor above, with concrete foundation. Contains 4 16x22x3 foot purifying boxes, complete with center seal, and 16 inch connecting pipes; also carriages for handling covers to boxes.

(12) BRICK PUMP PIT. (7½ feet x 10 inches, is of brick and stone construction. Is used to house river pumps of which there are two.

(13) WOODEN COKE SHED. (38x42x20 feet), wooden trusses concrete floor, corrugated galvanized iron roof; shed is open on three sides, and boarded one-third down from top, used to dump and store coke as it is hauled from retort house. Capacity about 600 tons.

(14) GAS HOLDER. (76 feet in diameter x 22 feet deep), is built in brick tank, single lift, and has a capacity of about 100,000 cubic feet. Was erected 23 years ago and is in good operating condition. Is now used as a relief holder in connection with the manufacture of water gas.

(15) Gas Holder. (40 feet in diameter x 19 feet deep), built in brick tank, single lift, and originally had capacity of 30,000 cubic feet.

(16) Stable. (24x30 feet), two (2) stories and basement.
43 Built of brick, wooden trusses, concrete floor, gravel roof, has room for six (6) horses in basement, and complement of wagons on second floor.

(16A) Fences and Foundation Walls. On the north and west sides of stable foundations form part of a retaining wall which are the boundaries of the property at this point. This wall is very substantial and averages 20 feet high on the north side and is about 50 feet long, while on the west side it is 80 feet long, with an average height of 10 feet.

There is also about the property some 300 feet of tight board fence, eight (8) feet high, and along the river side a rip rap of stone to keep the earth in place.

The following schedules show the property in detail with the value of the same:

Schedule "A."

(1) *Contents of Shop.*

1 14 in. x 8 ft. Fairbanks Mach. Co.'s Lathe	$200.00	
1 6 in. x 2 ft. Barnest Foot Lathe	25.00	
1 18 in. Barnes Drill Press	40.00	
40 ft. 1 11-16 Line Shafting	75.00	
1 H. G. Meter Prover	100.00	
1 5 inch Holland Machine Vice	5.00	
1 90 lb Peter Wright, Smiths' Anvil	4.50	
1 160 lb Peter Wright, Smiths' anvil	8.00	
Work Bench and Tools	125.00	
100 5 and 10 Lt. Meter (in repair)	562.50	
Lead pipe, pipe and fittings	150.00	
1 6 H. P. Engine (old)	25.00	
Total		$1,320.00

(2) *Contents of Store Room.*

2 Extra Fillings, Parker-Russell full benches of 98	$1,020.00	
Extra Fire Brick	100.00	
50 ft. 6 in. Cast Iron Pipe, Stand pipe	31.00	
90 ft. 4 in. Cast Iron Pipe	18.00	
1 16 in. Inside Screw Valve	45.00	
44 1 10 in. Inside Screw Valve	24.00	
1 No. 5 Sturtevant Blower	75.00	
1 Steam Pump (old)	25.00	
3 Coils Rope Yarn	10.00	
Sundry Small Stuff	25.00	
Total		$1,973.00

(3) *Contents of Coal Store.*

1000 tons of Yough'y Gas Coal at $4.52	$4,520.00	
1 set Howe 8 ft. x 4 ft., 4 ton Scales	75.00	
2 Steel Coal Wagons	75.00	
Total		$4,670.00

(4) *Contents of Retort House.*

3 Benches of 9s full depth complete with hydraulic main, stand pipes, mouth pieces, etc.	$9,800.00	
3 Benches of 6s half depth complete with hydraulic main, stand pipes, mouth pieces, etc.	6,750.00	
1 6 ft. Water Gas Set complete with generator, carbureter and superheater	4,500.00	
1 Engine and Blower	250.00	
Blast Pipe	40.00	
Tools, consisting of Barrows, Shovels, Rakes, Bars, etc.	75.00	
250 ft. 10 in. Foul Main, leading from hydraulic main to exhausters erected	317.00	
1 Water Gas Coaling Hopper	15.00	
Total		$21,747.00

(5) *Contents of Coal Room.*

Empty, used to receive boiler fuel in now. A new 8 ft. 6 in. Water Gas Set has been contracted for, to — placed here	$.....	

(6) *Contents of Boiler Room.*

2 16 in. x 72 in. Horizontal Tubular Boilers and Settings	$2,100.00	
1 Steel Stack, 40 in. diameter x 60 ft. high	250.00	
2 1¼ in. Hancock Injectors	25.00	
1 set 6 ft. x 4 ft. (4 ton) Howe Scales	70.00	
Tools, consisting of Shovels, Rakes, Pokers, Slice Bars, etc.	25.00	
Total		$2,470.00

45 (7) *Contents of Meter and Office Room.*

1 9 ft. x 9 ft. Station Meter	$2,100.00	
Desk, Chairs, etc.	10.00	
2 Bristol Recording *Guages*	80.00	
1 Jones Jet Photometer	10.00	
1 U Pressure *Guage*	2.00	
Total		$2,202.00

(8) *Contents of Scrubber and Condenser Room.*

1 23 ft. x 8 ft. Condenser with 171 3 in. tubes. The inlet and outlet connections thereto are 16 inch	$1,800.00	
1 8 ft. x 4 ft. Rectangular Washer	480.00	
1 20 ft. x 8 ft. Scrubber (equipped with trays)	1,800.00	
1 20 ft. x 8 ft. Final Scrubber (equipped with trays)	1,800.00	
1 36 in. Ammonia Concentrator, complete with Stills, Absorber, etc.	3,000.00	
Total		$8,880.00
1 Tar Separator	$150.00	
12 16 in. Valve at inlet and outlet connection including connecting pipes	840.00	
Total		$9,870.00

(9) *Contents of Engine Room.*

2 8 H. P. Troy Engines	$350.00	
2 10 in. (No. 3) Connersville Exhausters	750.00	
1 10 in. P. and A. Tar Extractor	175.00	
1 6 ft. Station Meter (W. G.)	600.00	
2 6 x 10 x 6 in. Clayton Compressors	1,250.00	
Total		$3,125.00

(10) *Platform Wagon Scales.*

6 Tons Capacity and Roof	$380.00	$380.00

(11) *Contents of Purifying Building.*

4 16 x 22 x 3 ft. Purifying Boxes, complete with center seal, connecting pipes, (16 in.) carriages for hauling covers, etc.	$5,000.00	
4,100 bushels Oxide at $1.50	615.00	
Total		$5,615.00

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(12) *Contents of Pump Pit.*

1 6 x 4 x 6 in. Duplex Worthington Pump	$90.00	
1 7½ x 4½ x 10 in. Duplex Worthington Pump	140.00	
Total		$230.00

(13) *Contents of Coke Shed.*

Average twenty (20) tons coke on hand for sale	$110.00	$110.00

(14) *Contents of No. 1 Holder.*

Average 40,000 cubic feet	$.....	$20.00

(15) *Contents of No. 2 Holder.*

Not in use.

(16) *Contents of Stable.*

1 3 Ton Dray	$100.00	
1 Bob-sled	45.00	
1 Pipe Wagon	90.00	
1 Heavy Team Horses	400.00	
2 Medium Horses	300.00	
2 Fitting Wagons	175.00	
Hay, Grain, Bedding, etc.	75.00	
Total		$1,185.00

(17) *Contents of Governor Pit.*

1 12 in. Connelly Automatic Governor	$550.00	
16 in. By Pass Connections	75.00	
Total		$625.00

(18) *Contents of No. 3 Holder.*

400,000 cu. ft. purified gas ready for distribution	$.....	$400.00

(19) *Contents of Ammonia Well.*

10,000 gallons weak Ammonia Liquor on hand (1907)..	$100.00	$100.00

(20) *Contents of Tar Well.*

12,000 gallons Tar on hand (1907).....	$300.00	$300.00

(21) *Contents of Oil Tank.*

10,000 gallons of Oil on hand (1907).....	$458.00	$458.00

47 (22) *Contents of Concentrated Ammonia Tank.*

4,000 lbs. on hand (1907).....	$250.00	$250.00

(23 and 24) *Contents of Tar Cisterns.*

2,000 gallons of Tar on hand (1907).....	$50.00	$50.00
Total.....		$856.920.00

(25) *Miscellaneous Material.*

60 ft. 1½ in. W. I. Pipe Covered.....	$12.00	
1,000 ft. Small Pipe (¾ in., 1½ in.) for Steam and Water.....	60.00	
300 ft. 2 in. Steam Pipe (covered).....	65.00	
350 ft. 2 in. Oil Pipe (and boxed).....	80.00	
175 ft. 2 in. Ammonia Pipe.....	17.50	
150 ft. 2 in. Galvanized Iron Water Pipe.....	22.50	
150 ft. W. I. Pipe (4 in.).....	45.00	
90 ft. 4 in. C. I. Pipe (ammonia).....	28.00	
150 ft. 1¼ in. W. I. Steam Pipe, covered.....	24.00	
300 ft. W. I. Steam Pipe, covered.....	45.00	
300 ft. ¾ in. W. I. Steam Pipe, covered.....	45.00	
500 ft. 3 in., 2 in. and 1½ in. pipe, fire protection.....	60.00	
2 lengths (24 ft.) 20 in. C. I. Pipe.....	49.00	
2½ lengths (30 ft.) 16 in. C. I. Pipe.....	52.00	
11 lengths (132 ft.) 12 in. C. I. Pipe.....	153.50	
11 lengths (132 ft.) 10 in. C. I. Pipe.....	114.50	
37½ lengths (450 ft.) 6 in. C. I. Pipe.....	209.00	
3 lengths (36 ft.) 4 in. C. I. Pipe.....	11.00	
6 4 x 6 in. Crosses.....	27.00	
7 6 in. Tees.....	27.00	
Total.....		$1,145.00

(26) *Second Hand Material.*

4 10 x 12 x 3 ft. Purifiers, complete with 10 in. connection	$1,000.00	
1 No. 4 Root Exhauster.....	150.00	
1 4 ft. Station Meter (old).....	200.00	
1 4 x 4 x 10 ft. C. I. Condenser with 144 tubes.....	250.00	
Total.....		$1,600.00

(27) *Yard Connections.*

80 ft. 20 in. Cast Iron Pipe.....	$200.00	
184 ft. 16 in. Cast Iron Pipe.....	401.00	
174 ft. 12 in. Cast Iron Pipe.....	252.00	
270 ft. 10 in. Cast Iron Pipe.....	304.00	
325 ft. 6 in. Cast Iron Pipe.....	211.00	
270 ft. 5 in. wrought iron pipe.....	108.00	
Total.....		$1,476.00

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SCHEDULE "B."

(28) *Street Mains, Laid.*

27,450 ft. 2 in. W. I. Pipe (E. S.)	$3,902.00
34,275 ft. 2 in. W. I. Pipe (W. S.)	4,884.00
39,450 ft. 3 in. W. I. Pipe (E. S.)	9,953.00
19,550 ft. 3 in. W. I. Pipe (W. S.)	4,932.00
17,200 ft. 4 in. W. I. Pipe (E. S.)	6,267.00
6,900 ft. 4 in. W. I. Pipe (W. S.)	2,510.00
1,930 ft. 6 in. W. I. Pipe (Bridge)	768.00
8,400 ft. 3 in. W. I. Pipe (H. P.)	1,932.00
5,400 ft. 4 in. C. I. (20lb) (E. S.)	2,592.00
13,650 ft. 4 in. C. I. (20lb) (W. S.)	6,552.00
21,300 ft. 6 in. C. I. (30lb) (E. S.)	14,271.00
8,650 ft. 6 in. C. I. (30lb) (W. S.)	5,795.00
6,550 ft. 10 in. C. I. (56lb)	7,434.00
3,950 ft. 12 in. C. I. (75lb)	5,727.00
750 ft. 16 in. C. I. (112lb)	1,199.00
23,760 ft. 3 in. H. P. connecting with Marion system of mains	3,483.00
Add for 15,000 ft. under asphalt	8,000.00
Add for 68,900 ft. under brick	28,291.00
Total	$118,986.00

Specials.

2 16 in. Tees	722 lbs. each
2 12 in. Tees	406 " "
2 12 in. Elis	288 " "
1 10 in. Tee	294 " "
3 10 in. Crosses	382 " "
2 10 in. (45 degree) Ells	224 " "
18 6 in. Tees	98 " "
1 6 in. Ell	76 " "
3 6 in. Crosses	128 " "
16 4 in. Tees	67 " "
22 4 in. Crosses	89 " "
1 4 in. (45 degree) Ell	55 " "
5 10 x 6 in. Tees	242 " "
4 10 x 6 in. Crosses	276 " "
8 16 x 4 in. Crosses	113 " "
13,247 lbs. Specials	$397.41
1 12 in. Valve	30.00
1 10 in. Valve	24.00
9 6 in. Valves	108.00
6 4 in. Valves	60.00
15 3 in. Valves	100.00
4 6 in. Valve Expansion Joints	80.00
3 4 in. Valve Expansion Joints	45.00
3 3 in. Valve Expansion Joints	36.00
Total	$870.00

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(29) *Service Connections, Laid.*

4,000 Service Connections from Main to Curb, 20 ft. each of 1 in., 1¼ in. and 1½ in. W. I. Pipe, laid	$8,000.00
Add for 5334 ft. under Asphalt	2,844.00
Add for 10,668 ft. under Brick	4,445.00
Total	$15,289.00

(30) *Meters, Set.*

3 Lights, 1830 at $6.50	$11,895.00	
5 Lights, 1173 at $7.83	9,184.00	
10 Lights, 742 at $9.50	7,049.00	
20 Lights, 16 at $12.75	204.00	
30 Lights, 33 at $17.00	561.00	
45 Lights, 14 at $24.25	339.00	
80 Lights, 1 at $44.35	44.00	
100 Lights, 2 at $54.00	108.00	
Total, 3811 at		$29,384.00

(31) *Contents of Office, Up Town.*

1 5 x 3 x 3 ft. Diebold Safe	$225.00	
1 Flat Top Desk	35.00	
2 Roll Top Desks	80.00	
1 Small Top Desk	25.00	
1 Table	15.00	
1 Copying Machine	27.00	
1 Addressograph	150.00	
1 One-half partition at rear of office	225.00	
1 Counter	500.00	
4 Pieces Rubber Matting	15.00	
2 4-Light Fixtures	10.00	
1 16-Light Display Fixture	50.00	
1 Arc Lamp	6.00	
1 Recording Pressure Gauge	40.00	
6 Gas Ranges	90.00	
Books, Stationery, Etc	300.00	
Map of Mains	75.00	
		$1,866.00

(32) *Contents of Shop at Office.*

1 Roll Top Desk	$35.00	
1 Drill Press	.....	
Welsbach Lamp Supplies	250.00	
Arc Lamp Supplies	125.00	
50 Meters for Use	283.00	
Pipe and Fittings	175.00	
Work Bench	40.00	
Tools	100.00	
Water Heaters	50.00	
Total		$1,058.00

50 (33) *Arc Lamps and Fixtures.*

550 Arc Lamps rented or loaned to customers, but property of company	$3,575.00	
		$3,575.00

Valuation.

(A) Land upon which works are located	$15,000.00
(B) Land upon which new holder is located	5,000.00
(C) Land recently purchased	10,000.00
(D) Thirteen frame houses	6,500.00
(1) Shop building	1,500.00
(2) Store Room Building	1,450.00
(3) Coal store	3,576.00
(4) Retort house (includes Nos. 7, 8, 9)	7,850.00
(5) Coal gas app. room	3,745.00

(6) Boiler house	900.00
(10) Platform Wagon Scales	180.00
(11) Purifying building	3,800.00
(12) Pump pit	175.00
(13) Wooden coke shed	335.00
(14) No. 2 holder	1,500.00
(15) No. 1 holder	5,000.00
(16) Stable	1,750.00
Retaining wall and fences	3,250.00
Reprapping on river bank	750.00
(17) Governor pit	250.00
(18) No. 3 holder	42,500.00
(19) Ammonia well	300.00
(20) Tar well	175.00
(21) Iron oil tank	730.00
(22) Concentrated ammonia tank	730.00
(23) and (24) Tar cisterns	400.00
Total	$132,868.00

(1) Contents of Shop (see schedule)	$1,320.00
(2) Contents of Store Room (see schedule)	1,973.00
(3) Contents of Coal Store (see schedule)	1,670.00
(4) Contents of Retort House (see schedule)	21,747.00
(5) Contents of Coal Room (see schedule)	.....
(6) Contents of Boiler House (see schedule)	2,470.00
(7) Contents of Meter and Office Room	2,202.00
(8) Contents of Scrubber and Condenser Room	9,870.00
(9) Contents of Engine Room (see schedule)	3,125.00
(10) Contents of Platform Wagon Scales (see schedule)	200.00
(11) Contents of Purifying Building (see schedule)	5,615.00
(12) Contents of Pump Pit Building (see schedule)	230.00
(13) Contents of Coke Shed Building (see schedule)	110.00
(14) Contents of No. 1 Holder, cubic feet	20.00
(15) Contents of No. 2 Holder (see schedule)	.....
(16) Contents of Stable (see schedule)	1,185.00
(17) Contents of Governor Pit (see schedule)	625.00
(18) Contents of No. 3 Holder, cubic feet	400.00

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(19) Contents of Ammonia Well	100.00
(20) Contents of Tar Well	300.00
(21) Contents of Oil Tank	458.00
(22) Contents of Concentrated Ammonia Tank	250.00
(23 and 24) Contents of Tar Cisterns	50.00
(25) Miscellaneous material	1,145.00
(26) Second hand	1,600.00
(27) Yard Connections	1,476.00
(28) Street Mains and Specials	119,856.00
(29) Service Connections	15,289.00
(30) Consumers' Meter	29,384.00
(31) Contents of Up Town Office	1,866.00
(32) Contents of Shop at Office	1,058.00
(33) Arc Lamps and Fixtures	3,575.00
Total	$232,169.00

Valuation.

Land, Buildings and Structure	$133,046.00
Contents of Buildings and Structure	58,065.00
Second Hand Material	1,600.00
Yard Connections	1,476.00
Street Mains and Specials	121,372.41
Service and Meters	44,673.00

Contents of Office and Shop	2,924.00
Arc Lamps Loaned	3,575.00
	$366,551.41
Working Capital	25,000.00
Good Will	100,000.00
Total	$491,155.41
Deduct for error computing value coal shed (p. 18)	$2,874.00
Deduct for error computing value coke shed (p. 18)	665.00
	$3,539.00
Add for error in computing cost of stable (p. 18)	500.00
Add for error in computing value retaining wall (p. 18)	2,150.00
	$2,650.00

The first building I have on my schedule is No. 1, known as the shop building, this is 50x20x19, is built of brick and iron with gravel roof and used for repair and storage of meters, pipe and fittings. I examined the building myself and took measurements of it and have placed a valuation on it of $1500.00. In arriving at the valuation of the building I took the length and breadth and height and determined the number of square superficial feet there was in
52 the building, figured the number of brick, the cost of laying the same, also took into consideration the kind of roofing and foundation, and upon this I based my calculations and the rule I always use in calculating values of such buildings of this character, has been to figure the superficial feet in the building and the number of brick and the cost of laying and multiply that amount by two, which just about covers the cost of foundation, roof, windows and paint. There are several ways by which it can be figured but this is the rule that I usually use.

Q. You figured on the building of a new building.

A. No. I would like to say in my calculations here I have taken into consideration the present condition of the building, and in regard to the apparatus I have not figured that as new apparatus unless I knew they were new. In figuring the value of the buildings I figured so as to get the value of it, for the purpose for which it was used at the present time just as though I was sent here by someone who was desirous of purchasing the property. I went over it with the same care that I would if I was buying the property for them. I have had experience in the valuation and building of buildings of this character for gas works, and am acquainted with the construction of such buildings, not to the same extent that a contractor is, but in the same way that an engineer to a gas works or any large institution would be. This building contained a lathe, work bench, tools, meter prover and pipe fitting tools and meters. It is used more especially for a meter shop and for examining meters. I am acquainted with the value of the machinery and tools and things I found in that building and have placed a valuation on them of $1320.00, and the separate valuation of each item is found under
53 "(1) Contents of shop" of schedule "A" of my estimate (Abs. p. 43). I believe they are fair and reasonable values. In any instance where I did not know absolutely the value

of the article I made inquiry—for instance, the price of lathe or anvil or the machine vice. As a general thing I think I am well informed regarding meters and meter provers, wrought iron pipe and lead pipe fittings but these peculiar machines I made inquiry as to the price of them now, and made my own deductions as to their present valuation.

The second building was that indicated in my schedule (Ex. No. 14) as 2, "Store room" 37x26x19 feet. I have placed the value on this building at $1450.00, and I believe it is a fair valuation for the kind of a building and for the purpose for which it is used. This is the present value of the building. (The contents of this building are as shown under (2) of schedule found on (Abs. p. 43). In arriving at the valuation of $1620.00 of the two extra fittings for coal gas bench. I figured that from what the completed benches would cost, deducting the labor and what entered into the cost of constructing such a bench. The total valuation of the contents of this building is $1973.00, and I believe it to be a fair and reasonable present valuation.

The next building is indicated on Exhibit 14, as No. 3, coal shed for storage of coal. It is constructed of "I" beams that consist of 22 foot 8 inch "I" beams set in concrete, these "I" beams are 30 feet long and set 2 feet in concrete; the building is 77x51 feet, the roof supported by "I" beams and the sides are planked with 3 inch removable planking, so arranged that they can be taken down to any height making it very convenient to load and unload coal. The capacity is 1000 tons. My estimate of the value of that building is $3,576.00. There is a concrete wall on the railroad side of this building for its entire length and wooden floor. The con-
54 tents was about 1000 tons of coal valued at $4,500.00. I understand that the coal cost $4.45 per ton on the car and 7 cents to handle it, which I think is reasonable.

The next building was No. 4, the retort house, 76 feet long, 30 wide, of brick, 19 feet trusses, 1 slate roof. It has cast iron floor erected on "I" beams. I examined the building to ascertain its condition and am familiar with the cost of such buildings, having had such buildings constructed under my management of gas works and have valued such buildings for the purpose of arriving at value of plants, at Freeport, Kankakee, Spokane, Detroit and Milwaukee. I placed a valuation of $7,850.00 on it, which is the fair and reasonable present value of the property. As the contents I found 3 benches of 9's full depth. By full depth I mean there is sufficient depth so a man can easily stand up and work under the floor and it also gives more room for consumption of fuel than in the half depth bench. In the case of 6's there is only half the depth and the regeneration of the fuel is cut down. These three benches of 9's I gave a valuation of $9,800.00. I found 3 benches of 6's on which I placed a valuation of $6,750.00. Each of these has hydraulic mains, stand pipe, mouth pieces, etc. I have had experience in the purchase and erection of these benches, at Des Moines, and Milwaukee, and Detroit. I passed upon all the bills in the purchase and erection of 48 benches in Milwaukee.

The life of these benches of retorts depends entirely upon whether the benches after they have once been heated, are kept under fire continually until they are destroyed or whether they are fired up and then allowed to cool. If the heat is kept constant until the life is entirely consumed, that portion of the benches through the
55 hydraulic main and floor main will last from 24 to 26 months, but if they are allowed to cool and then re-heated their life is very much shorter—18 months would be a long time under such conditions. They have to be renewed with new retorts, new blocks, arches and flues, everything from the hydraulic mains to the recuperator. A new bench of like character delivered and erected including freight would cost $3,750.00. This does not include the iron work which would bring it up to $3,900.00 a bench. I do not know how long these benches had been in use; I examined them and found them in good condition. You cannot always tell the condition of a bench when under fire. They may appear to be in good condition and go to pieces the next day. I did not ask how long they had been used, but did ask whether they had required any patching up to this time or had shown leakage. I made as thorough an examination as I was able to make with them fired up.

There was also one 6 foot water gas set which I valued at $4,500.00. A new water gas set has been placed since I made this valuation. This old set is still standing there, but needs repairing. There were other, small items in this building bringing the total value to $21,747.00. I examined all these pieces of property and in my judgment I have given the present fair valuation of the same.

The next building is indicated as No. 5, which I valued at $3,745.00. In arriving at this valuation I took into consideration the present condition of the building and the length of time it had stood and the valuation given it is as the building now stands, and is less than the value of a new building. The contents of this building are described under No. 8, of my schedule, as "scrubber and condenser."

56 The sixth building is the boiler room, described under my estimate and on which I placed a valuation of $900.00. (The contents are also detailed in the schedule). I have placed a total value on these of $2,470.00. I made inquiry as to when the boilers were installed and found it was about one and one-half years ago. I was advised that they were not new boilers when installed, but they appeared to be in first-class condition when they were put in. I believe $2,100.00 to be a fair estimate of the value of these boilers; this is not the price of new boilers.

Room No. 7 is the meter room; it is a part of another building. I made no separate valuation of this room but valued the meter at $2,100.00, and the whole contents at $2,202.00. This is not the price of a new meter. The pressure gauges are priced new, the same as the jet photometer. They were practically as good as new. So far as the meter is concerned it is its present value.

The next building is the scrubber and condenser room. The floor of the building is of concrete, and the room contains the scrubbing and condensing apparatus. I have given the building a valuation in

my estimate of $3,745.00. (The contents of the building are given under (8) of this witness's estimate). The value that I have placed on the condenser is practically the value of a new condenser. There is not very much depreciation through that particular piece of apparatus. My figures include the foundation under the apparatus, also the inlet and outlet connections. It was practically a new apparatus, and the valuation I have given is practically the value of new apparatus of that character. The other apparatus in this building brings the value of its contents up to $9,870.00.

57 The tar extractor and the valves at the inlet and outlet connections including connecting pipes, I placed at $840.00, which is practically the value of new apparatus, though I have made some little allowance for the short time they have been used. They are practically new. Number 9 on my schedule, is the contents of the engine room, which I have valued at $3,125.00. I do not know how long these engines and exhausters have been in use, but they are in reasonably good condition. I judged their value by the condition I found them in. I valued the two exhausters resting on a foundation at $750.00; a new exhauster would cost $475.00, with foundation. I valued the tar extractor at $175.00. A new machine of that size would cost about $225.00. There is no movable machinery in that, so the wear is very small. A tar extractor is a cylindrical vessel built of cast iron and stands in this case, 8 feet high. Inside the cast iron shell are discs so perforated that the tray set above the one beneath it, they do not come directly above the holes below, the idea being to present the gas to as much friction as possible in passing through the machine, to throw down the tar that is in the gas after it leaves the hydraulic mains. I valued the 6 foot station meter used for measuring water gas at $600.00.

This is not the improved type but would cost new $1,145.00. I had no means of ascertaining the condition of the station meter; it is closed at both ends and it would be impossible to see the interior mechanism, but it appears to be in good condition. I think this price a reasonable valuation. It is only an estimate, for the reason I could not see inside the meter; but feel that I have placed it very fair. The meter is quite an expensive thing to repair. The drum and the clock work are the only parts of a meter to wear out and I thought that a new drum put in this one would make it as good as new.

58 The two, 6 inch x 10 x 6 Clayton compressors are practically as good as new and I valued them at $1,250.00, which is practically the price of new machinery, though I deducted a little for the time they have been in use; they have not been used to exceed two years. The scales I valued at $200.00 which is a little less than the price of new scales. I notice that I have not included in my estimate any valuation on the roof over the scales.

The purifying building is indicated on my estimate as No. 11. The building is of brick, wooden trusses, gravel roof and concrete floor. In the basement a second floor is built of wood, on iron pillars and concrete foundation; the building is practically new, having been constructed within three years. I have placed a value on it of

$5,800.00. It contained four 16 x 22 x 3 feet purifying boxes, complete with center seal and 15 inch connection pipe, also wrought iron carriage on trucks for the removal of the covers. I placed a valuation of $5,000.00 on the four purifying boxes. These boxes were second hand, although in good condition. They had been brought here from another city that had suddenly outgrown their capacity, and they do not anywhere near represent the cost of new boxes. New boxes of practically the same capacity would cost $16,682.00. They serve the purpose for which they were installed. They are a little out of date, the modern box being five feet deep. The contents were 4,100 c. f. of iron oxide.

The next item is the pump pit, a pit excavated and built up with brick in which the pumps that raise the water from the river for the works is housed. Value $175.00. Contents two pumps $230.00. These are not the prices of new pumps but the value of the pumps as I found them. A new pump the size of the small one
59 would cost about $115.00 or $120.00; the other pump is practically new.

The next item is the coke shed which is valued at $1,200.00. That is practically the value of a new building. It is in good repair. The contents of this building I estimated to be 20 tons of coke, worth $110.00.

The stable is a building 24 x 30 and two stories high, with basement. It is built of brick with wooden trusses, concrete floor, gravel roof and has room for six horses and complement of wagons on the second floor. I valued it at $1,250.00. I think I am low on this valuation because two sides of that building form the retaining wall upon which it is erected. The contents I have set out in full in the schedule and the total valuation is $1,185.00.

I examined the gas holders carefully for the purpose of placing a valuation upon the same. Holder No. 2, as I have designated it, is 76 feet in diameter, 22 feet deep, is built of brick tank, the holder itself being of steel; it is known as a single lift holder with 100,000 c. f. capacity. It is now used as relief holder in connection with manufacture of water gas, but was originally erected for a storage holder.

It is in good condition and I have placed a valuation upon it of $15,000.00. The day I was there it contained about 40,000 cubic feet of gas, which is about the quantity that is carried on an average in it. This is unpurified gas, partially scrubbed and partially condensed. Holder No. 1, is now out of repair. It is a single lift holder and originally had a capacity of 30,000 c. f. It is now used for the storage of oil and could be used also for storage of tar. My valuation on it is $5,000.00. That is what I believe is the value of the masonry tank in its present condition—not of a new holder. The
60 holder proper is in condition that it could be raised and overhauled so that with those conditions I believe the holder is well worth the money I have placed against it. As a matter of fact the value I have given is only a nominal value.

The third holder, No. 18, on my schedule, I valued at $42,500.00. This is about the price paid for the holder at the time it was built.

It is not a sufficient price to pay for that size and type of a holder new at the present time. It would cost new $45,000.00. I should say the yearly depreciation on such holders might be 3 per cent., which could be based for illustration upon Holder No. 1, built in 1876, and now is out of commission except for the value of the tank. Holder No. 3, has been used three years. It contained 400,000 cubic feet of purified gas ready for distribution, on which I placed an arbitrary value of $100.00 per M. c. f., not knowing at that time what it cost to manufacture gas here. Ammonia is extracted from the gas in the process of washing and scrubbing, the ammonia liquor runs off with the tar, but they are finally separated. This ammonia liquor is in a weak condition when first deposited, but coming in contact with the gas a number of times the strength is increased to the point that it becomes of commercial value and this tank is used for storage purposes. I valued it at $300.00, which is the fair present value of the tank, and the contents at $100.00. The tar well is of brick construction and used as a receptacle for the tar from the works, which finds its way from the different condensing and scrubbing apparatus to it. It has a capacity of 12,000 gallons, and I valued it at $400.00. The oil tank I valued at $730.00, and contents at $458.00. This tank is a large steel cylinder or boiler.

There are also fences and foundation walls on the north
61 and west sides of the stable forming a part of the retaining wall which is the boundary of the property. This retaining wall would run about 50 feet from east to west and 40 feet from north to south, and the average height is 20 or 25 feet; it is three feet wide, built very substantially with heavy stone, and I understand it extends to a depth of 8 feet below the mean water line of the river. I think that $3,250.00 is the value of that wall, and I have included the fence in my estimate. There has been some rip rapping done since I made my estimate, but I included all rip rapping that was in at that time. The additional riprapping would be valued at $250.00. I estimated the riprapping at $750.00, which is in addition to the stone wall. I designated in my estimate the miscellaneous materials which I found on hand, the total amount of which I valued at $1,145.00. In connection with the cast iron pipe referred to in these miscellaneous items inasmuch as this property is not laid in the ground and not deteriorated, I see no reason why it is not worth as much as new pipe. The value I have placed on it is $32.50 a ton. Pipe of the same character laid down at Cedar Rapids is worth $37.00 a ton today. Inasmuch as the second hand materials included in this miscellaneous materials represent capital that has been expended at sometime in the construction of the gas works, I placed a valuation on it anywhere between what it would sell for as old iron and what it might be sold for to parties erecting small gas works for which it could be used. There is a sale for it, and it is just a question of hanging on to it and selling it by piece meal.

The yard connections I have valued in my schedule at $1,476.00.
These are used for conducting the gas about the works, from
62 one piece of apparatus to the other and finally to the holders and from there to the street. These pipes are laid in the

ground. I used on these a price of $32.50, but if I had used the present cost of $37.00 per ton it would increase the valuation given by me $206.64.

I ascertained the amount of street mains from the record kept by the plaintiff, and this part of my valuation I have designated on my schedule as No. 28. I found by the record the following street mains. And have valued them as follows, including cost of pipe and cost of laying.

27,450	feet of 2 inch wrought iron pipe	$3,902.00
34,275	feet of 2 inch wrought iron pipe	4,884.00
39,450	feet of 3 inch wrought iron pipe	9,953.00
19,550	feet of 3 inch wrought iron pipe	4,932.00
17,200	feet of 4 inch wrought iron pipe	6,267.00
6,900	feet of 4 inch wrought iron pipe	2,510.00
1,600	feet of 6 inch wrought iron pipe	768.00
8,400	feet of 3 inch wrought iron pipe, H. P.	1,932.00
5,499	feet of 4 inch cast iron pipe	2,592.09
13,650	feet of 4 inch cast iron pipe	6,552.00
21,300	feet of 6 inch cast iron pipe	14,271.00
8,650	feet of 6 inch cast iron pipe	5,795.00
6,550	feet of 10 inch cast iron pipe	7,434.00
3,950	feet of 12 inch cast iron pipe	5,727.00
550	feet of 16 inch cast iron pipe	1,199.00
23,760	feet of 3 inch cast iron pipe, H. P.	5,483.00

I ascertained the character of the soil in Cedar Rapids and the depth the mains are laid and the amount of mains laid under the pavement. My valuation on the pipe includes the cost of the pipe, the cost of distributing it along the streets and the cost of laying it. The cost item of pipe that I have mentioned includes the high pressure that connects with the Marion system but does not form a
63 part of it. It is the high pressure pipe from the works to the city limits and if it is a 4 inch pipe instead of three inch, then I would change my figures. The price of 23 cents a foot which I have used in calculating the cost of the 3 inch pipe only covers the cost of ordinary steel or wrought iron pipe, but this pipe is high pressure and would cost 46 76/100 cents laid, making a total cost of the 23,760 feet connecting with the Marion system, $11,350.15. With this correction the total is $126,349.15. In my estimate I have added $8,000.00 additional to the cost of laying pipe under asphalt paving. And I did this because I made my estimate on the mains as I found them. I found 15,000 feet of mains laid under asphalt paving, and this certainly should be considered in arriving at the present replacement value. If one were to lay mains in the principal streets of Cedar Rapids today, they would have to remove and restore the pavement in order to do so and this removing and relaying the paving is recognized as a proper element in the valuation of plants of this character by all investment companies, and by all waterworks and gas companies, and all engineers in the construction of public service plants, and in arriving at this item, I consulted

contractors who laid the last asphalt in the city, also went about the city and examined the character of this paving.

In arriving at the value of the mains outside of the paving, I took the market value of the wrought iron pipe and deducted from that value a sum which I thought would be ample to cover the present condition of it. I then added to that price the labor of excavating and refilling and laying the pipe; in the case of the cast iron pipe, I took into consideration the then market value of cast iron pipe and applied what I believed to be a fair rule as to the present
64 average condition of it, and knowing the weight used that factor to arrive at the cost per foot, and added to that cost the cost of labor, laying excavating, refilling, etc. In estimating the cost, I assumed the price of new pipe at $38.00 per ton at that time and I based my estimate on $32.50, that harmonizes with the same rule that I have applied in estimating the value of this property. I have taken into consideration the present average condition of the pipe and my depreciation was made from the price of the pipe originally. I allowed extra to laying pipe under brick paving, $28,291.00, there being 68,900 feet, and arrived at the amount by ascertaining from the record that there was that quantity of pipe laid under brick pavement and also by going over the city to note that the record was correct, to the relaying of that paving I applied the lowest contract price for laying paving of that character.

I believe I have given a fair present value of the street mains and that it would cost $126,349.15 to reproduce the distribution system at the present time in its present condition. It would cost more than that to reproduce the present system for I took cast iron pipe at $32.50, and the present price is $37.00 per ton, or an increase of 14 per cent. over my valuation. I figured the sum of $18,679.61, which is 5 per cent. on the structural value, for both engineering and superintending.

The item of interest on capital should also be taken into consideration. It would probably take a year and a half to construct the works, but I have based my calculations upon the works being constructed in one year. The money would be idle one year, and therefor entitled to some compensation. This item at 6 per cent. amounts to $22,415.52, making up to this time $422,804.52.

In the organization preliminary to the erection of a
65 plant there are certain expenses that are always necessary, such as legal expenses, preparation of certain papers in connection with the corporation and promoting the company, and I believe 4 per cent. of the structural value is reasonable for this item. For laying the services, pay salaries of clerks, and in order to do that I have estimated it would be necessary to have a working capital of $25,000.00 in addition to the supplies I have included in my estimate, or $40,000.00 in all.

In the building of a new plant there is also an item that should be considered and charged into its value, known as engineering expense.

In laying out a plant of this magnitude it would be necessary for some one having ability to design it and superintend the construc-

tion and it is always customary for experts in estimating the value of a plant to include this item, for it is just as important to have a competent man to engineer and superintend, as to do the work. I have not included it in my schedule thus far, but am of the opinion it should be allowed.

Had I used the present price of new wrought iron pipe it would have increased my estimate in the cost of wrought iron pipe $7,851.99.

I did not include the specials in the cost of the street mains. I have taken the specials as a whole and figured them at so much per pound. There was a total of 13,247 pounds, and the value of these specials I have stated in my schedule at $397.41. These specials are Ts and Ls and crosses, and are used in sections of streets and alleys, taking off branches from the main line. The valves are given in my schedule at $—. I took the value of new valves in quantities and deducted from that valuation enough to make
66 the value less depreciation, which left what I thought the value at the present time is.

I ascertained from the record that the company had about 4,000 service connections, that is pipes that conduct the gas from the main into the dwellings. I valued these from the main to the curb, and consist of a "T," what is called a service "L," and 20 feet of 1¼ inch or 1½ inch pipe. I estimated this at 10 cents per foot as the present value of the pipe. The cost of the pipe and cost of laying it now would be 11.28 cents. My price is what I believe is the present average value of the services in their present condition, and would mean a depreciation on the value of new pipe. I also allowed an additional amount of $2,844.00, for laying services under asphalt paving and $4,445.00 for laying under brick paving. And I believe this a very conservative estimate for the service pipes.

I ascertained the number of meters and placed a valuation on them of $29,384.00. The several sizes being mentioned in my schedule. I consider it a very conservative estimate. I had no means of examining every meter. I have placed thereon what I feel to be a fair average value for the meters in use.

I valued the contents of the office at the shop and placed the same in my schedule and those are the fair and reasonable values. I found 50 meters in the shop office that were either new meters or had been thoroughly overhauled and were as good as new. The price I allowed for them was for a 5 light meter or $5.25, and a new 5 light meter would cost $6.55.

The record shows that the company had at that time 550 arc lamps which it had loaned to customers, but remained its property. It receives a certain amount per month (50 cents) each for
67 taking care of them. If competition with electric light is sharp so these lamps cannot be sold, it is good policy for a company to own them or rent them, inasmuch as they consume gas and it means increase of sales. This is one way the companies take of advertising and increasing their business and is a legitimate expenditure of capital, and the price I have given of $6.50 per lamp is

a fair valuation at the present time. The cost of the new lamp with burner is $8.70, including 50 cents for hanging.

The contents of the holders should probably be considered as a part of the working capital. A working capital is very important. In the beginning of operating a plant like plaintiff's, you would have to provide for all the materials used at the works, provide for supplies for distribution, the pay roll, and value should be added amounting to $14,943.69, which I think would be a reasonable charge to make to the capital account in reproducing the plant.

The going value is what the business is worth to the individual or corporation, which business they have themselves developed. Here is a gas company that has been engaged in business for a number of years in this community. All the business they have secured has not come to them of its own free will, but there has been a certain amount of development and education to induce people to use gas either for light or for fuel. The company has spent thousands of dollars in development. Suppose that another gas company would be given a franchise to lay mains they would not have to go through the same development and educational period that the present company has. I would say the good will of the company in a town of the size of Cedar Rapids with its present business and what it has accomplished by way of developing, would be worth at least one hundred thousand dollars.

68 The total generating capacity of the works of plaintiff is not far from 750,000 c. f. daily, but the other parts of the apparatus about the works would not be sufficient to take care of that volume of gas but would take care of about 600,000.

I have made some calculations as to the cost of a new plant in Cedar Rapids, putting in all new materials and all up-to-date machinery of about the size of the one that plaintiff owns. If I were to build a plant in Cedar Rapids it would not be a plant that would be just large enough to turn out a quantity of gas just sufficient to supply the needs of the city. The management of this company have not anticipated very many years in advance of their requirements. They have kept up-to-date without looking very far ahead, so that in making an estimate of what I would consider an ample works, I have considered a plant of 750,000 c. f. daily capacity, with the company's present mains and estimate that Cedar Rapids would reach that amount of gas sent out within five years. The estimate I have made is for a coal gas plant exclusively, but have included a water gas set, to be used in case of an emergency, such as strike at the works or break down.

I would estimate to build a modern gas works now of 750,000 c. f. daily capacity, land suitably located and of proper size would cost $20,000.00. I assume the company would get farther away from the center of the city than at the present time.

Land	$20,000.00
Coal shed	6,000.00
Retort house for 8 benches of 9s	18,500.00
Building for washers, condensers, scrubbers, tar extractors, etc	4,500.00
Building for engines, pumps, etc	3,000.00
69 Building for purifiers	8,500.00
Building for station meters and tanks	2,000.00
Building for boilers	2,000.00
Building for water gas set	7,000.00
Stables	3,500.00
Shop and stove room	4,500.00
1 one million gallon holder	75,000.00
1 relief holder for water gas	22,000.00
1 twenty thousand gallon oil tank	1,500.00
2 tar tanks	1,500.00
2 ammonia tanks	1,500.00
2 sets of scales	500.00
Eight benches of 9s	35,000.00
Washers and condensers, etc	12,000.00
4 purifiers, complete	17,000.00
1 governor	1,000.00
Ammonia apparatus	4,250.00
2 boilers	4,000.00
2 ten foot station meters	7,500.00
Valves and connection	1,500.00
Pumps for heating water, etc	600.00
Coal and coke conveyances	22,600.00
Contents of store room and shop	49,700.00
Mains and services	150,956.35
Valves and supplies	957.00
Meters and connections	50,000.00
For paving	7,289.00
Total cost of up-to-date works	$571,882.35

Q. You made reference to the state of repair in which this plant has been kept, you may explain that?

A. I can best answer that question by assuming that I was one of the owners of the property and made only occasional
70 visits to the city for the purpose of examining the plant and knowing its condition and returned home and made reports to you or other interested parties. I would feel that there were certain things about the works that did not satisfy me. I would say frankly that I did not believe the repairs are kept up quite as closely as should be the case in works of the size and importance of these. I do not think enough money has been spent on repairs. I am very certain by the appearance of things that there has not been as much money spent upon the works as I would expect of any management with whom I was associated to keep this works in condition.

I am interested in the gas works at Boone, Iowa, and at Spokane, Washington.

Cross-examination:

I first became financially interested in a gas plant in 1887; it was the Capital City Gas plant at Des Moines. I was owner of part of the stock. I next acquired stock in the Boone plant in 1899, am still a stockholder in that company; next in 1903 in Milwaukee, next in Detroit in 1905. I own no stock in any except the Boone plant, now. I am interested in the Spokane plant as manager only, working upon a salary. Some of the owners live in Spokane, some in Chicago, and some in New York. My contract is that I go to Spokane at least four times a year and more often if my services are required. I make my report to M. W. Halsey & Co. of New York, bond brokers. I frequently see their management in Chicago and go over this gas works with them in a general way. I assume they have some large interest in the plant, else they would not have taken it upon themselves to employ me since 1897. I have prob-
71 ably been financially interested in gas works for a period of four years. I have been engaged in no other business but the gas business. My interest has been principally in managing, my financial interest has been somewhat limited.

I have not been interested during all that time in holding up the price of gas, on the contrary I have tried to bring down the price. It has been my theory and policy from the time I commenced managing property or knew enough to manage property to help put down the price. I have not named Peoria as one of the plants that I have valued, though I am willing to do so. I was not employed by that gas works to maintain a lower price at Peoria. I never testified in behalf of a municipality where the question before the court was the reduction of the price of gas I have always testified in favor of the company by whom employed, whether as manager or as expert.

Q. In this city you are doing nothing to attempt to lower rates charged for gas.

A. No, I think you can attend to that.

The same principle has been involved in other places. I did not hear all the testimony in Peoria. I testified there. I do not remember the sum of 90 cents being the price per M c. f. I do not know that the Peoria Gas company has since voluntarily adopted the rate of 80 cents per thousand and paid all the costs of the litigation.

I have never been employed by persons who were promoting or locating plants. I have never associated with the so-called promoters. I designed and built the plant in Boone. I have approved of certain plans that have been made with reference to extensions
72 on the present work in Spokane. I was one of the persons who asked for and obtained the franchise at Boone, and designed, built and started the works, if you call that promoting. I think that the word promoting if used in the way in which I take it to myself, it is right and proper. The word promoting is used by different persons for different meanings.

Q. If to a plant located in Cedar Rapids in '71, a franchise should be given, bonds issued for $75,000, on the franchise and $150,000 of stock issued as a value of that franchise you would call that a sort of stock job.

A. I would not. I think that is legitimate. I think that if a man had the nerve in 1871 to build a gas works in Cedar Rapids he is entitled to all the profits since 1871. Since leaving Milwaukee I was general manager at Detroit one years and since that time I have had my office in Chicago, and like yourself and other lawyers struggling for existence. I have been waiting for people to knock at my door. I am seeking such employment as I have in this case, and consulting work and building, if any of it comes to me but the principal work that suits me best is managing. I said I had made no plans for gas companies since I opened my office in Chicago, about a year ago. Since I opened office in Chicago I have examined the plants at Kankakee and Freeport for the purpose of determining the reasonable price of gas. I examined the plant at Winona for the purpose of satisfying a prospective purchaser as to value. In other words, I was employed to ascertain the probable future prospect of business and condition of the plant, for Havermeyer of New York. At Kankakee and Freeport I was valuing the plant with a view to interesting some parties at Detroit in con-
73 nection with myself, to purchase. I mean that I am not running around soliciting the price of works, but if they come to my notice and I think from what I know of the city, they are worth looking after, I will do that, of course.

I have devoted altogether a week's time in examination of the works and books of the Cedar Rapids Gas Company; my first visit was in February. I was here then two days.

I have not measured the number of miles of mains in Cedar Rapids, but took that from the record of the company; neither do I know how many meters they have. I did not visit them all.

The two large meters of which I testified and placed a valuation on of $100.00, are in the cereal mills. Their value would depend somewhat upon their condition. I did not see them. With reference to the size of the mains, the number of feet, size and number of meters; everything that is not in sight I have taken the plaintiff's records for; whatever is covered up and was under ground I did not see. Practically all in sight is the buildings, the real estate and the gas machinery. With reference to the size of the lots, I have only considered in that respect what was essential for the holding of the works and the marking of the gas. The fact that there is only 300 feet front on First street, instead of 420, would not make any difference if the ground is ample for the machinery. I do not think that the original price paid for the land should be used as the price of it now, when valuing the plant. I would add any appreciation and cut off any depreciation. It is worth more now than it was five years ago for any purpose. It is more valuable for a gas plant because it is nearer the center of town. I said that if I was going to build
74 a new works I would not locate it the same place; I think it too near the center of the city. I say it is more valuable

today than it was five years ago for the manufacture and distribution of gas. The railroad has bought up all the property down through that locality and that makes it more valuable. They are willing to have tracks for the delivery of coal and coke, and I understand the railroad proposes to occupy that ground in that vicinity, that is one reason why I say the value of real estate has increased; of course that would not make any difference in the cost of gas, and they may not be worth any more than they were five years ago for the manufacture of gas, but there are other things to be taken into consideration, and one is the company will have to move that entire property in a few years, simply from the odors or smells that emits from the gas works. I do not pose as an expert, but as a man of experience only.

The capacity of Holder No. 3, the one situated on Fr. Block 10, is 500,000 cubic feet. Holder No. 1 is not in use, and No. 2, is used as a relief holder in the manufacture of water gas.

Figuring upon the square feet I would say that about two-thirds of the land owned by the gas company in Fr. Blocks 9 and 10, is occupied by the present works.

A gas holder 125 feet in diameter and of the depth of 60 feet, filled once daily would furnish a little more than twice the annual amount of gas sold by the Cedar Rapids Company, but there is need of more ground because if they continue to manufacture coal gas, it will be necessary to extend their coal gas benches and find another place for the water gas apparatus. The coal gas apparatus is sufficient to supply the entire city if everything is in first-class condition, but in the operation of coal gas apparatus there are always a
75 number of benches not under fire. I would think that under some circumstances it would be necessary to have apparatus of both coal and water gas sufficient to supply the entire consumption because there may be a strike of stokers, etc., and the running of water gas apparatus would tide the company over. I do not know that it would be necessary to enlarge the plant on this account at present but I would contemplate it. It would be necessary to install additional water apparatus from that already installed. Basing calculations on the growth of Cedar Rapids and the business since 1885, it would not be necessary to install additional water sets, in the near future; but I base my estimate on what the business has shown the last year.

I do not think it would take five years for the consumption at the Cedar Rapids plant to reach 300,000,000 feet of gas per annum, based upon the growth of the city and census return, and upon what has happened in the last few years. I estimate based upon growth of 1906, for 1908, 133,000,000 c. f., for 1909, 160,000,000, 1910, 192,000,000, and 1911, 230,000,000; I base this upon an increase of about 20 per cent. I understand the two cereal companies consume a great deal of gas in Cedar Rapids and that would account for some of the increase in consumption in 1906 and 1907. The number of meters in Cedar Rapids to the number of inhabitants is a little better than the average. In my calculations I am assuming that the average increase will continue. I knew the increase in 1903

over 1902 was about 18.18 per cent; of 1904 over 1903, 16.74 per cent, and of 1905 over 1904, 19.28 per cent, and 1906 over 1905, 18.67 per cent. I had never figured it. I do not know how you can anticipate what the consumption will be for the last three months of this year, but it would be fair I think to take the increase of the last two years for the same three months. I think,
76 under those circumstances, 15.78 per cent. would be a very large increase. If the increase in the volume of business had been at the rate of 25 per cent. in this city, I would not anticipate it to be over 15 per cent. for the next five years.

A new holder 120 feet in diameter could not be erected on that piece of ground now occupied by the gas works without demolishing holders Nos. 1 and 2. Holder ground, for tearing it down and removing it would cost more than it is worth; nor could No. 2 holder be removed profitably. Going back to the original proposition, for the purpose of manufacturing and distributing gas these lots are not worth any more today than when purchased, but property has advanced in that vicinity, and I do not see why a gas company would not be entitled to the increase as well as any other party would be. I did not say it was worth more for the manufacture of gas, but I say it is more valuable land and is worth more.

I have added to my schedule of prices on account of mains under paving:

For 15,000 feet mains under asphalt	$8,000.00
For 68,900 feet mains under brick	28,291.00
For 5,334 service under asphalt	2,844.00
For 10,668 service under brick	4,445.00

I did not understand that all these mains and services were laid prior to the paving, I never inquired. I would have made the same estimate whether they were laid before or after the paving, with possibly the exception of the brick paving. I made the estimates on the theory that if new mains and services were laid it would be necessary to dig up this brick and asphalt paving and relay them and without regard to whether the mains were laid before or after the paving. I testified there were 40.67 miles of mains.
77 Assuming that the pipes, services and mains are where they are and had been before 1906, and that no paving whatever was laid up to that year, but that after every street was paved with asphalt, I would add the cost of the paving to the value of the mains which would according to my estimate .5333 cents a foot, assuming the calculations are correct and there are 238,635 feet, this would make $127,264.00, and for the 80,000 feet of services $42,648.00, and would add the total cost of the paving over the mains and service pipes.

Q. Suppose you testified in this case the same as you testified in Peoria, you would add 10 per cent. on this valuation in arriving at a rate.

A. Yes, sir. I have no reason to change my mind since testifying at Peoria, but I want it understood that I divided up my calculations

in a different way; at Peoria I put it in a lump sum. It is all right for promoters to pay for the capital stock according to the amount that went into the property originally. If these works have appreciated they have not done so by a sudden sale. The money has gone into the stock and it makes but little difference whether it is represented by stocks or bonds. I know nothing about watered stock. I have not been advised and do not know whether there is any watered stock in this or not. I believe the company has the right to issue and sell stock as fast as construction value of the property increases: if the present value of the property is $400,000 and the original value was $150,000, the company has the right to issue stock for its own protection, either by selling stock or to keep it themselves, for it represents money invested.

Q. And every once in a while they can add to it and you think it all right, and to the amount of $23,000, they have added
78 the good will as the plaintiff acquires customers, it is all right to add this value on and then issue watered stock and on those declare a dividend.

A. Yes. I have added these matters of working capital since I made my original estimate, because it came up in the further study and consideration of the matter. I was here in February and gave the company a copy of my estimate in March. I added the figures with reference to good will because I believe they are a part of the present value of the property, including the property to be reproduced at this time. This is a matter I have been considering for years. I don't remember that I ever testified to the value of the good will in a case before this. I testified in the Des Moines case where the capitalization of the plant and the rates for gas were involved in 1895, that is the only case that I remember. I also assisted in Milwaukee. I did not testify to the adding of interest in building new works.

I may have testified with reference to good will at Peoria. I think I did.

The item for organization and legal fees I have $14,943.69. I don't know that the secretary of state's fees and all fees connected with the organization would be less than $200. I know it is customary in the organization and building of a plant to include such expense. I do not know what attorneys charge for drawing such papers. I would think that not far from $3,000 of this amount would go as legal expenses. I don't know that I could distribute the other $11,000 for you, but I know it is usual to apply a percentage in the organization and construction of large companies, but I had not given it enough consideration at the time I made my schedule to include it.

79 Q. Suppose the plaintiff paid $50.00 for legal expense and charged it to operating expense it would not be proper to add them to the value of the plant.

A. I think not. If you found this plant had charged off 12 cents or 13 cents per 1,000 feet for gas sold every year it would largely cover the depreciation.

Q. If they had done that in their operating expenses when it

comes to showing their books to show what the cost of gas is to the consumer, it would not be proper to show that depreciation.

A. I don't think I have added that. I have not given the exact cost of the articles of gas apparatus and mains, but I have given an estimate of the values according to the condition in which I found them. I have charged off a certain amount for depreciation and the amount charged off has been in proportion to the time the apparatus has been used, bringing it down to date. I never saw a cast iron main that has worn or rusted out, but there are places in which they will, such as electrolysis, which exists chiefly on account of negligent or improper construction of railways and lack of attention to the system, and the greater care in construction the less electrolysis will be found. By electrolysis I mean electricity getting on the mains and destroying a portion of the pipe. If the water mains and street railway had been in for 18 years, were owned by the same parties and there during all that time electrolysis was unknown, I would not charge off much on account of that. But the street railway being here it is very certain that electrolysis is here, for there is more or less electricity that affects the pipes wherever there is electricity in the town. It does damage when the electricity leaves the pipe and I have seen pipes affected in cities for one hundred feet, there being frequent intermittent attempts to pass
80 off from the pipe which was injurious to it. I understand from Mr. Averill that there has been some experience with electrolysis on the water mains.

The gas mains may be closer to the street railway track than the water mains or may pass a point where they would pick up electricity quicker than the water mains and it would not follow that because no electrolysis has been experienced with the water mains that it may not attack the gas mains. I don't know that the water mains are closer to the street railway line than the gas mains. I think not. I don't remember where the gas mains are laid in the street. I know the line out to Marion is paralleled by the street car track.

All the gas to Kenwood and Marion is piped through the 23,760 feet of high pressure pipe which is included in my estimate. I think it is right to charge that line to Cedar Rapids. I would not expect Marion to pay any more than the line between city limits and Marion. I believe it is 4½ miles from the works to Kenwood. I understood there were a number of customers between Twentieth street and Kenwood Park, but it would not alter my estimate if there were only 20. I understand that the cheapest way to get gas up to Twentieth street and beyond was by this high pressure main. I never visited that territory to ascertain the pressure or to ascertain whether it was necessary to augment the pressure, or not, but I think it must have been necessary or the high pressure would not have been built.

There may be some chemicals in the soil that might attack the cast iron mains also, but the soil in Cedar Rapids is mostly sandy and favorable to long life of pipes and there would not be
81 much depreciation outside of electrolysis, and I made no separate item in charging off for that. I made a general charge

off for depreciation of cast iron pipe. I took into consideration the length of time they had been in use generally, also the average price. The company has a record of the time the pipe has been in and I consulted the record for that, and for depreciation I allowed the difference between $32.50 a ton and $37.00, because I think the pipes in their present condition are worth $32.50 which is about the average price extending over a period of ten years. I did not just assume this average price, for I had in mind the depreciation. If there was none I would have been justified in estimating the price of new pipe $37.00 per ton. I took into consideration the value of the pipe just as I did the value of the apparatus and buildings. I do not say that gas pipe laid 25 years is worth as much as gas pipe that had never been laid. I have some idea of what the price of pipe was then. During the past 25 years cast iron pipe has been as low as $25.00 a ton. I don't know that it has been as low as $15.00. In making my estimate I had the price of pipe possibly back as far as five years. I was not considering the interest of the consumer, I was considering the value of the property. I would say that the average price of all cast iron pipe used by the plaintiff has been bought at $32.50 a ton. I don't know that the largest amount of their pipe was purchased at $18.00 to $25.00 a ton. The price of $32.50 is not an arbitrary price, it is a fair price for cast iron pipe laid in Cedar Rapids, and whether the price is fair or not is determined by the market value. The present market value is $37.00. They haven't bought any pipe recently; there is some at the works that appears to be in good condition, but I don't know when it was bought. In my depreciation of the pipe, I did not take into
82 consideration that the company purchased a large portion of the pipe at $18.00 to $25.00 a ton.

The depreciation of wrought iron pipe is much more rapid than of cast iron. The depreciation on wrought iron pipe is simply based on the experience I have had at different places. I don't use any scientific rule, in making my estimate of the depreciation of wrought iron pipe, it is figured solely on my own experience. I think I allowed liberally for depreciation when I charged but 10 cents a foot for the size of the service connections, it would cost $11.82 new put in, and the other comparison, I figured all service pipe at 1½ inch; some of it is 1½. I think the life of service pipe in such soil as you have in Cedar Rapids would be from 12 to 15 years uncoated. I do not know that the service pipe in Cedar Rapids has not been renewed within 10 or 12 years, or that many of the service pipes have never been renewed, but would say that if service pipes in this city have been in use 20 years they should be renewed. To coat service pipe with a mixture of tar, rubber, etc., would add perhaps five years to its life, provided in laying the pipe the coating is not knocked off in use of wrenches, etc. The coating would add from a quarter to a half cent a foot to the cost of the pipe and perhaps 30 per cent. to the life. Well regulated gas companies coat their pipe.

In giving the valuation of $6.50 on three light meters it would be proper for the first setting of the meter including the cost of the

meter, to add that cost to the value of the property in valuing the property to determine the reasonableness of a rate, but not if it was a renewal of the setting. I have added, before taking anything off for depreciation, $2.25 for setting—50 cents of this for labor in setting, the rest is made up of laying the pipe connections in
83 place and cocks and nipples. The service pipe I have testified is the service pipe from the main to the curb only. The rest of the pipe from the curb to the house is paid for by the consumer.

I would testify in this particular case whether I was compensated or not; because I have known Mr. Averill a good many years and would do most anything for him that was fair and honorable, I am anxious that he should succeed in anything that is fair and right.

In giving the value of the service pipe I did not go back and get the price of service pipe of this size for a number of years. I have a record of the prices for the last five or six years. I suppose there are records covering a larger period. I don't know that there has been a great decrease in the price of wrought iron pipe. I have the records of several companies, who have laid much wrought iron pipe, my recollection is that the rate of increase on wrought iron pipe has been in the last ten years something like 15 per cent. I have the record of some 26 or 27 gas companies as to the price of cast iron pipe on February 1st each year.

Q. Have you any record from any reliable wrought iron gas pipe manufacturer today?

A. Yes, sir. I have the record of those companies that have bought and used pipe for the past five years. I cannot give you the prices from a manufacturer for more than one year; beyond that I have no record, but last year it cost as follows:

1 inch	$4.39	1½ inch	$6.41

The 1¼ would be about midway between the other two, or 5c. I have taken these prices from a memorandum book made by myself, containing the cost of pipe and cost of labor in laying
84 pipe. I figured the cost of trenching, laying and filling at 9.97c. for 1½ inch pipe. I think one man could excavate, lay and fill 20 feet a day. The service pipes are laid to the tap of the main ordinarily 3 feet in depth and I figured one man could dig 24 feet a day. I don't know that one man can dig one hundred feet a day. If as an actual fact, they were digging considerably more than 20 feet a day, then my estimate of 24 cents would be considerably reduced.

Q. Suppose the policy of the gas company is to require the consumer to construct service pipe from curb to inside of the building where the meter is, and refuses to allow a plumber to do it, and they charge 15 cents a foot to do this work. They would have a profit of 4 cents for doing it, wouldn't they.

A. There would be no profit; 15 cents will just about cover the cost of laying the pipe under one condition and another the time in moving the tools from one place to another. In my experience 15 cents will not yield very much profit to anybody. The average

plumber charges 10 cents to 15 cents a foot to lay pipe where there is no excavation.

With reference to building No. 1, the shop, I have not figured the foundation separate from the rest of the building. To explain the method by which I computed the value of the buildings I ascertained the superficial feet in the building. This building is 50 x 20 x 19 feet; my method of calculating is as follows: I multiply the length of the building by 2 to get the length of the two sides and the width by 2 to get the two ends; I add the sum of the 2 sides and ends which gives me 140 feet, I multiply that by 19, the height of the building up to the gables, which gives me 2,660 feet. I add to that 40
85 square feet, which gives me the square foot capacity of the two gables of each end, which gives me 2,700, and the thickness of this particular wall I multiply by 25, which gives me 67,500 brick at $13.00, a thousand laid makes $877.50, to cover the foundation for a building of that character. To pay for the roof and openings and windows. I multiply the cost of the walls by two, and the value of the building I place at $1,500. The foundation and roofing and ventilators are about equal to the cost of the building proper. I used the same method of computation for all of the other buildings. I have not made an estimate on these buildings, in the same way as they would on a fine building, such as the Montrose. I used this method in Des Moines. I don't think a contractor would use this rule.

In building No. 2, I found there were 71,022 brick. In valuing frame buildings I would use the rule that would be applicable to them and not the same as is used for brick.

The sides of the coal shed as so constructed that the planking forming the sides are removable so that the coal can be emptied from the cars into the coal shed at any height. Along the inner side next to the railroad track is a concrete wall and each of the beams rest on a concrete post.

My estimate on this building was $3,576.00. I ascertained the price of the "I" beams of the Des Moines Bridge and Iron Company and figured it at $726.00. The lumber I figured at $478.00; trusses and roof $1,493.00; painting $35.00; concrete wall and floor $700.00; I don't remember the number of pounds of iron in the "I" beams. In valuing the roof I took into consideration its strength and the general construction.

86 The roof is made of galvanized iron. I estimated the number of feet of lumber in the sides of the building and found there was 16,900 feet of plank measurement, or practically 51,000 feet of lumber measurement. I did not apply any rule of computing this cost, but just figured it in the ordinary way. I applied the same rule of computation on the coke shed as I did on the coal shed. It is practically the same kind of a building. If I have not made the correction with reference to that building I desire to when the time comes. I have stated that I figured on the brick walls of both the coal shed and the coke shed. I found in the joists, uprights and what siding there is, 8,000 feet of lumber in the coke shed and the roof is of corrugated iron. The building has a tar

concrete floor, that is broken stone, sand and pitch, and is made very thick and heavy, and I figured it at $150.00; I wrote my description of the coal and coke shed in my inventory from my personal examination of it, and had it before me when I computed the value, because of figuring the walls of brick. I desire to make a correction and change the value of that building from $1,200.00 to $530.00. The rule I applied to the other buildings is for new buildings, and in giving the valuation of the steel "I" beams in the coal storage building it is for a new building. I used the same rule in computing the value of the purifying building as in the other, except that I did not make the same deductions in figuring that building, because it is practically a new building. I made my estimate of the valuation and deducted what I thought was right for the present value.

I have given my idea of a new gas plant and have stated that its capacity should be 700,000 per day. Assuming that the cost of this plant would be $571,832, the cost would be about $2.48
87 per M. of annual maximum capacity. Very often we, as gas engineers, can find the value of a plant by ascertaining their maximum capacity; but I never applied the rule in that way. I think that the estimate is nearer on the basis of $5.00 per thousand c. f. for the maximum sales, and in that the future prospects of the city is largely taken into consideration, the education of the customers is taken into consideration also. I would certainly say that this plant is worth more today than it cost.

Q. If you deducted a certain amount for depreciation and if the plant cost only $267,500.00, then you must have added something like $200,000.00 for appreciation.

A. I did not know what the plant originally cost. I have taken into consideration only the present value of it. I have given the value of the plant at the present time without depreciation or appreciation. I did not take into consideration what the original items entering into the plant cost originally or how much they had depreciated by their long use, only by the appearance of the apparatus as I find it today. With reference to depreciation I have taken the plant as I find it today and in a general way have taken what a piece of new machinery costs today and figured the wear and tear on it. I did not know how long each piece of machinery had been in use; I explained in my examination it did make a difference as to how long it was used, and that it might be used ten years and be good, or one year and be worn. I figured on the general appearance of the meters and how long they had been in use. I did not go to the houses and examine the meters but saw the average that were brought into the shop from time to time.

In my estimate of the meters, I placed the ten light meter at $8.40 delivered here; $1.50 for the connections and 75 cents for
88 the average cost of setting, making a total of $10.65. So that the difference between my estimate of the present value and the value of a new meter set is $1.15. The list price for a three light meter is $7.50, with a discount of from 30 to 40 per cent., with perhaps an average of 33 per cent.

If you build a house and make application for a meter, which is taken to your home, that meter is properly capital account; if for some reason it is removed and taken to the shop and repaired and another taken back, that is operating account.

Q. But, suppose the company charges it to operating expense, it wouldn't be proper in determining this rate to permit the company to charge a large amount of operating expense for setting new meters, as well as old ones, when you go to value the plant.

A. No, sir. I don't know of any meter that can be bought for $5.00. The meter cannot be used as capital and also charged to operating expense. I used no scientific rule in ascertaining the depreciation of the meters; it was an arbitrary amount based upon my judgment and experience. I concluded as a matter of fact, that the depreciation on these meters would amount to about 13 per cent. If I testified that the depreciation of meters at Peoria was 7 per cent., the conditions did not prevail there that do here, and the average of the meters was better there than it is here. The atmosphere has nothing to do with a meter, but the character of gas distributed will, —that is whether gas has a large amount of ammonia. The depreciation would be altogether owing to the age of the meter. I haven't got the age of the meters here, but I know that every gas company is buying new meters and destroying old ones all the time.

89 Q. Now taking up the gas pipe and mains. Their value depends somewhat upon the leakage?

A. That depends on where the leakage is. If it is through a joint of the pipe it can be repaired. If it is by break, the old main will have to be taken up and a new one laid; if leakage extends the entire length of the main, such as might be caused by electrolysis, the whole pipe would have to be taken up. In a well regulated plant 7 per cent. leakage is expected. In estimating the value of the plant I didn't think the leakage would be considered unless it was very high; anything below 10 per cent. would not be considered, if over 10 per cent. it would be considered a serious proposition. I did not take into consideration the leakage in making up my valuation. The trees about town seemed to be in good condition and I didn't see any dead spaces in the lawns, and I naturally concluded that the mains were in a pretty fair condition. If the leakage was reported 13 per cent. I would not begin at the mains to locate the difficulty, but at the station by testing the meter, also ascertain the temperature at which the gas was being measured. This would mean the shipping in here of what is known as a wet meter, of which there are not very many in the country; making of special connections and shutting down of the works while the tests were being made, because only as much gas could be sent through the station meter when the changes were being made as the capacity of the proof meter would allow.

I can't conceive of a gas company allowing leakage to continue on account of the expense incident of stopping it. The way I would explain the 13 per cent. termed leakage of plaintiff by calling it the difference between gas made and that sold to consumers,

90 which is unaccounted for gas. It may be due to false registration of the meter, or to taking the readings at too high a

temperature, or that the consumers' meters are not correct, or it may be due to something that takes place after the gas goes into the mains and may be due to leakage.

If the plumbing inspector finds that all the meters are fast and none slow, there would be no loss on account of improper registration of consumers' meters, but it would be the first case in the history of gas meters I ever heard of. If you will examine the Massachusetts gas reports you will find that the registration of error is on the side of being slow or favoring the consumer, rather than being fast and favoring the company. I would look for leakage elsewhere. I don't know at just what temperature the gas goes into the station meter in these works. The station meter is corrected to 60 degrees.

Q. And there would be no losses or variations to temperatures as coal gas is concerned?

A. If the barometrical pressure is also taken into consideration, if it is normal, there would be no deductions to be made for temperature. The water gas is pumped back (from relief holder) and meets the coal gas at the exhauster and they are both measured together at the large meter, corrected to a temperature of 60. So the amount of leakage on account of temperature can be easily explained,—under those conditions the amount registered would indicate the correct quantity of gas manufactured. I would not correct my valuation on mains because the books of the company show leakage of 13 per cent.

There is no scientific basis upon which to figure the life of wrought iron pipe. I have seen wrought iron gas mains that at the expiration of one year have been entirely perforated and I have seen
91 them down for ten years and in practically as good condition as when laid, and I know no rule or standard as to the life to apply to wrought iron.

I have a general idea of the life, but not within one or two or five years. I would say a wrought iron pipe without being coated in this soil would last fifteen years, and I have said that a good coating would probably add five years to the life of it. I assume they do not coat the pipe here and I assume that in my valuation.

I took the average cost of pipe, at the time I made the estimate, February, 1907, and the labor of laying the pipe at 22 or 23 places sufficiently near Cedar Rapids, so that the difference in cost of labor and material would not be very great. These costs were the costs for one year, 1906. It was based upon the reports of gas companies, engineers and superintendents having that class of work in charge. It was not based on contract work, for I know of no people who contract to lay gas service pipe. I took the year 1906, because I believed that was a fair period in which to take the prices. It was fair to the present conditions of the works and mains and services as I found them. I know the price of labor was higher in 1906 than for several years. Wrought iron pipe may have been a third lower at sometime between 1886 and 1906 than it was in 1906, but was not lower extending over that entire period.

In my direct examination I said that if I were to design and build a gas works for this city at this time I would provide a works that

so far as its manufacturing capacity was concerned would be 750,000 c. f., it being necessary to look into the future. This would be 230 millions a year maximum capacity, and I put in my estimate
92 as working capital $25,000.00, exclusive of coal, oil and supplies, and what would be necessary for the first pay roll until the company began to receive an income. I included in my estimate 10,000 tons of coal. It would not be necessary to provide for more coal than they would require for one year. The amount on hand would depend entirely upon the bargain I could make as to the deliveries of coal. I don't know what amount this company keeps on hand but it is always a safe proposition to guard against non-delivery of coal and I think it is good business to provide for at least five months of coal. I think the coal shed of plaintiff will hold from 1,800 to 2,000 tons.

If the plaintiff did not expend to exceed $65,000.00, less residuals in the year 1906, for coal, fuel, labor, office salaries and repairs and did not intend to in the future, then my estimate for working capital in an ideal plant would be too large. At the time I examined these works I would say that $25,000.00 working capital, in addition to 1,000 tons of coal, 10,000 gallons of oil, the oxides and other fittings and materials on hand, plus the Wellsbach and incandescent lamp supplies, was a reasonable working capital.

According to the figures I have before me the company received in 1906 from all sources, $106,135.14, and for gas sold, $96,593.78. Assuming the same quantity of gas was sold each month, this would be about $8,000 a month. The consumer is expected to pay for the gas consumed last month by the 10th of this month, and gets a discount of 10 cents a thousand if he does so, and usually practically all the customers take advantage of the discount, and assuming they pay and that $8,000.00 of gas was sold in January, the
93 company would expect to receive about that amount of money by the 10th of February for gas manufactured in January. 1,000 tons of coal would run the plan- considerable over one month, and the oxide on hand might be used for two years. It is always necessary to replenish it to some extent but this had not been used long and was in good condition.

In my estimate of the value of the plant, if my figures as to amount of materials on hand, there is enough material on hand to supply gas to the customers for the months of January and February, basing the future consumption upon what had been consumed in the previous months. In fixing working capital at $25,000.00 I took into consideration the value of the materials they had on hand at the time I made my examination and also an amount for Wellsbach burners and the materials of that nature.

I didn't take into consideration in making that inventory how long the materials on hand would run the works, but took into consideration the size of the plant and magnitude of the business and considered $25,000.00 was a comparatively small amount of money with which to carry on the business. Five hundred dollars would cover such supplies as lubricating oil, waste, brooms, shovels and such tools, but would not include all the material that is used in the

up town office for the conduct of the business there. When I visited these works they were reasonably well supplied with these small items. To be on the safe side I would say that these works could have run six weeks without the purchase of additional supplies.

Q. Do you know how many laborers it would require to produce the gas consumed in January, 1907?

94 A. If they run three benches it would require three men on each shift, one foreman of each shift, one general foreman, one man to bring in the coal, one man feeding coke, one man to repair of tools, etc., one fireman, which would be 13 or 14 exclusive of water gas. At the water gas apparatus it would require a gas maker and a helper. I know about the average price of wages for this class of laborers. The general foreman would get $83.00 a month, each foreman of shift $65.00, stokers $50.00, men who bring in coal and take out coke $60.00, the man who attends the purifiers $55.00; the repair man $65.00, water gas maker $65.00, his assistant $50.00, fireman $55.00, street foreman $75.00.

I would have two men on call to repair leaks in the mains or services and employed at some other work when not busy at that, at $55.00; two men to attend to complaints, $50.00; five fitters or shop men at $60.00; three helpers, $35.00; two setting and removing meters, $55.00; two burner maintenance men, $50.00. In a town of this size I would also have four solicitors at $65.00 a month, and one stove demonstrator at $75.00 per month; the latter would be for the purpose of increasing business.

I do not know plaintiff's system of bookkeeping and I did not go over the books of the company for any of my work. I did not prepare answers to the interrogatories or anything except what is in this schedule (refers to Exhibit No. 14).

In addition to the things I have mentioned, I would need working capital to pay salaries. I would have in the office one chief clerk at $90.00 per month; one consumers' ledger book keeper $70.00; one cashier at $75.00; one sundry bookkeeper $70.00; one addressograph man $50.00; complaint man $65.00; one office boy $30.00.

95 My time has been spent altogether upon the physical part of this examination and I am depending a good deal upon memory in answering these questions relating to working capital and I prefer not to depend upon memory. At the works the labor would require about $1,920.00; and distribution $354.00; office employes $790.00; gratuitous work $187.00; new business and advertising $687.00; six months' supply of coal $19,153.00, which is included in my $25,000.00 working capital.

Based on what has been done in Cedar Rapids, if I have made no mistake, the amount of money required for the first pay roll would be $3,919.99, and in arriving at that I assumed that the company in starting in business at once sells the amount of gas this company does but has not capital with which to do business. My statement is not made so that I can tell just what the labor would cost per M per month. If the first pay roll amounted to $4,000.00 and the total sales in January were 10,000 M, it would amount to

40 cents per thousand cubic feet. I would not suppose that the labor in the manufacture of gas anywhere in this locality would be as much as 40 cents per thousand cubic feet. I prefer not to answer as to what the price of labor is at Boone. I did not base the amount that I thought was necessary as working capital upon the results at Boone or Spokane, but upon what I believe would be an ideal plan working under ideal conditions. I did not take any plant or the workings of any plant. I prepared the statement of $25,000.00 of working capital according to the conditions that exist here. I assumed that the company was making gas and would have coke either for sale or sold and that the company had a ready market for coke and tar at current prices, and I took the conditions in Cedar Rapids as to labor and the works of plaintiff company.

96 Q. Would you make any deductions from that ideal plant you have explained in order to get what was absolutely necessary to manage these works.

A. I certainly would. I have been a little more extravagant in my figures on the ideal plant than actually existed. (Continued on page 385.)

W. E. Steinwedell.

The plaintiff then produced the above named witness, who being sworn testified on direct-examination as follows:

I live in Cleveland, Ohio, am 34 years of age, have lived in Cleveland about five years. Since living in Cleveland I have been engaged in the gas machinery business as secretary of The Gas Machinery Company; prior to coming to Cleveland I was engaged in the gas machinery manufacture at Ft. Wayne for about six months.

I was engaged in the operation of gas works, prior to going to Ft. Wayne, in Belleville, Ill., for three years and in Quincy for two years, and in Europe for three years. I was general superintendent of the plant at Quincy and Belleville. I had charge of laying street mains at those places.

My business now and for five years has been entirely the manufacture and sale of gas machinery and I am acquainted with and handle such machinery as is in operation in the Cedar Rapids plant, and have furnished a considerable part of the machinery for this plant. I am also acquainted with the trade and selling prices of such machinery as plaintiff has in operation at its plant, and have

97 examined it for the purpose of ascertaining the kind of machinery they had, and for the purpose of estimating and giving the price upon new machinery of like character. My examination included all the machinery in the plant and nothing beyond the outlet of the plant. It also included most of the connections around the plant. I have made a list of such of the machinery as I was thoroughly satisfied I knew the price of today and placed a valuation upon new machinery of like character.

On the 2 16 feet by 72 inch horizontal boilers complete, I placed a valuation of $3,956.00, which is the price which I would bid to the

Cedar Rapids Gas Light Company to install two new boilers of that kind in their plant, in competition with other bidders.

One 8 foot water gas set complete, $14,780.00, which represents the present value or trade price of the water gas set such as is installed in the plant of plaintiff. One 6 foot water gas set complete, $8,137.00. This is the price I would bid in competition to replace the 6 foot set they have there at present, and all these prices I have given from this one are such as I would bid in competition with other firms in replacing such apparatus.

One oil storage tank $650.00; one hopper $60.00; piping $126.00; water pump and piping $592.00; three tar wells $1,600.00; one tar pump and pipe $172.00; one ammonia concentration $3,150.00; ammonia liquor tank $750.00; one ammonia liquor well $530.00; piping to liquor well and tank $335.00; steam piping $649.00; mixed gas meter and by-pass $3,710.00; water gas meter and by-pass $1,480.00; holder No. 1, and brick tank $7,150.00; holder No. 2 and brick tank $16,500.00; holder No. 3 and foundation $44,000. In holder No. 1 the brick tank takes the place of a foundation. Holder No. 1 on my list corresponds with holder No. 2 on Pratt's list.

98 In gas works it is customary to provide every piece of machinery with a by-pass which consists of three valves and connections arranged in such a way that the gas can be made to go through the machinery or in case the machinery needs cleaning or overhauling, may be passed around.

One governor and by-pass $800.00; three benches of nines and two extra fillings $13,950.00; three benches of sixes $7,400.00; two coal buggies $250.00; one fire pump and piping $715.00; two Bristol recording -*ua*ges and piping $35.00; one meter prover $250.00, one lathe $325.00; one drill press $60.00; shafting and bolts $90.00.

2 vices	$17.00
2 anvils	31.00
1 6x4 scales	110.00
2 8x14 scales	200.00
4 purifiers	16,296.00
Fuel mains	740.00
2 exhausters and engines	1,400.00
2 2x10 inch by-passes	625.00
1 10 inch tar extractor	310.00
1 10 inch by-pass	154.00
2 gas compressors	1,300.00
1 final condenser	1,500.00
1 16 inch by-pass	520.00
1 washer	800.00
1 16 inch by-pass	310.00
2 scrubbers	1,715.00
2 16 inch by-passes	1,200.00
1 old exhauster	200.00
1 old scrubber	275.00
1 old condenser	700.00
1 tar seperater	820.00

99 My figure on the four purifiers was upon cast iron purifiers the same as the company has at the present time and of the same dimensions but new. In naming a by-pass and price of the same, it has reference to and is for the piece of apparatus mentioned immediately preceding it. The old exhauster, scrubber and condenser are not in use, but they are at the plant and it would cost the amount I have designated to replace them, and in all the prices I have given so they represent the prices that I would give the machinery on the trade generally for installation of like new machinery; they are prices which I would bid in Cedar Rapids and they are prices at which we get work right along. The list that follows is a list of the street mains, and the dimensions I have taken from the gas company's records as to length, but the quotations are what is would cost to lay these mains new in fair average soil. They are as follows:

61,720 feet 2 inch wrought iron pipe	$10,863.60
67,400 feet 3 inch wrought iron pipe	20,220.00
24,100 feet 4 inch wrought iron pipe	9,481.00
1,600 feet 6 inch wrought iron pipe	1,040.00
19,050 feet 4 inch cast iron pipe	9,429.50
29,950.00 feet 6 inch cast iron pipe	20,994.95
6,550 feet 10 inch cast iron pipe	9,094.50
3,950 feet 12 inch cast iron pipe	6,952.00
550 feet 16 inch cast iron pipe	1,523.50
23,760 feet 3 inch high pressure W. I. P.	11,167.20
13,247 pounds specials	662.35
1 12 inch valve	33.00
1 10 inch valve	27.00
9 6 inch valves	153.00
6 4 inch valves	78.00
15 3 inch valves	150.00
8,000 feet service pipe	960.00

100 I took the quotations on the price of pipe to be delivered at Cedar Rapids, and it comes by foot and not by ton. I took 2 inch pipe at 10.44c. a running foot; three inch pipe I figured at 21.9 cents per foot; 4 inch wrought iron pipe I figured at 31.34 cents, and 6 inch at 54.52 cents; 4 inch cast iron I figured at 38.28 cents per foot; 6 inch at 55.29 cents; ten inch at $1.14 per foot, and 12 inch at $1.46; 16 inch at $2.31. The 3 inch extra heavy wrough iron I figured at 39 cents, but have not figured any 4 inch extra heavy wrought iron pipe. I suppose it would be pro rata increase over the 4 inch light weight, with the three inch over the three which would be an increase of about 78 per cent over the weight of the light pipe, and would make the cost of extra heavy 4 inch pipe about 55¾ cents extra over the light weight, and 39 cents for the three inch.

I also have an item on my list for replacing paving, but I have simply taken that from Mr. Pratt's estimate. I have not been over the streets to see how much pipe there was under paving but assumed

his estimate of the amount correct. The price I have given for laying the specials included what it would cost in the ground, providing you would arrange them all at once and go at it on a large scale, and with new materials and putting them all in at one time, under one contract.

I have also valued the following:

1,830 three light meters and connections	$12,352.00
1773 five light meters and connections	9,677.25
742 ten light meters and connections	7,494.20
20 sixteen light meters and connections	582.45
14 forty-five light meters and connections	351.40
1 eighty light meter and connections	45.90
2 one hundred light meters and connections	111.00

101 In arriving at the number of meters I have assumed that the company had the number given on hand, and have taken them from the record and have assumed the number was correct. I have figured on installing new meters of the same character that they have here at present, same type of meter, and have included the cost of meters, labor in setting and whatever was necessary in making connections as much as I was familiar with.

The items at the works such as bob-sleds, wagons, etc., the prices of which I did not know, I did not include and I did not make any estimate of supplies on hand.

I did not make any estimate of supplies on hand. The prices that I have given of this apparatus are correct prices and are the fair and reasonable cost of installing such machinery in Cedar Rapids at the present time and include the foundations for the machinery but they do not include the engineering expense or interest on the plant while it is being built. They include such foundation as is suitable for the local conditions and for the machinery; with reference to the boilers the price I have given includes the boilers, the brick foundations, all specials in boilers, with the pumps and apparatus and the boiler set up and ready to run.

Some of the apparatus of plaintiff is quite new and was installed by myself. This consisted of condensing and scrubbing apparatus, the ammonia concentrator and the new water gas apparatus. We have installed the water gas machinery within a year. We completed it last spring about April. We did not furnish any machinery that is used exclusively for the Marion plant that I know of, but we furnished them apparatus which is probably mak-

102 ing some of the gas that is going to Marion. I did not examine the way to ascertain where the pipes are located except that I have looked at the map in the office and know in a general way how the mains are distributed but I do not know the direction of the high pressure mains.

I believe the contract for the 8 foot water gas apparatus was made late in the fall of 1906. The price I have given here is the actual contract price for that machinery, plus what the foundations would be. The gas company furnished the machinery.

We are in the business of installing gas machinery. We put it up and turn it over to the gas company ready to run. All machinery I have listed is installed by our firm except the mains.

The prices given do not include opening in the building to get the machinery in.

Cross-examination:

I was acquainted with the officers of the Cedar Rapids Gas Light Company prior to coming here on this trip. I have been acquainted with them and they have been my customers about five years; they had not been customers of the company prior to that time.

The Gas Machinery Company is a corporation of Cleveland, Ohio, and has its shops at only the one place. It does not manufacture gas and water pipe; it manufactures coal gas apparatus and water gas apparatus and other machinery; does not manufacture or sell engines or boilers. We also manufacture by-products machinery. There are some small things such as valves that we also manufacture, which would include the manufacture of iron fittings,
103 but not of pipe for mains or service connections.

The prices I give for pipe I get from the pipe mills. From the National Tube Works, Milwaukee Tube Works—we manufacture our own wrought iron pipe of all kinds. I think the pipe companies are a trust and is known as the U. S. Pipe Line Co. The price of gas and water pipe are fixed to a certain extent by this National Tube Company; as a rule it is almost standard.

The prices I have given are for 1907, they are the prices of today as near as I can tell. Prices have varied I think during the last four or five years or ten years. I think the price of three inch pipe has varied considerably during that time. All kinds of raw material entering into the manufacture of pipe has increased in the past two or three years. A plant installed ten or even twenty-five years ago will cost now considerably more than it did then. I do not know whether it would cost double or not. If a plant was kept in good repair during the last twenty-five years it would actually have appreciated rather than depreciated.

The life of a gas holder is limited. The life of a holder can be impaired by recklessness or by inadequacy or physical decay, or it may become too small and its life cut short. If a holder is kept well packed and taken care of it should last for thirty years. The materials entering into holders have materially advanced and in placing this price on the holder it is based upon what it would cost to build the holder today.

I have looked the plant over and have seen everything on this list that I have given. We made the inventory ourselves last
104 spring. It was because plaintiff said they would like to have us tell them about what it would cost to replace some of their apparatus and give us an inventory of it and we sent a man here to get a list of what materials we could give them. I knew at that time that the company was in a controversy with the city in respect to a rate for gas. We were asked to give them an estimate of what we would furnish new machinery for on the prices of this year. It

was to show what it would cost to replace the machinery. It was not with a view of my ascertaining what percentage of depreciation or appreciation there had been; I have no estimate of the depreciation of the material that is in the plant today. In my inventory I supposed that the paving in Cedar Rapids was brick paving with sand and rock foundation, with some of the older paving having concrete foundation. I assumed Mr. Pratt's figures for the pipe under paving, to be correct, and gave no opinion of that whatever.

I simply was asked to furnish a price for what we would put in the new apparatus for, and I furnished these figures with the understanding that we would put them in for these prices.

Q. But not with an idea you would be expected to put them in at all.

A. Not entirely. The estimate was furnished solely with the idea of giving the replacement value of the apparatus you have at the present time. We have four or five competitors in the manufacturing of this kind of machinery in this country. Those companies are under no agreement whatever, we bid in competition entirely and have been during all of the last five years.

E. G. Cowdery.

The plaintiff then produced E. G. Cowdery, who being sworn testified on direct examination as follows:

105 I live in Chicago, have lived there six months; my present business is vice president of Peoples' Gas Light Co., of Chicago; prior to living in Chicago I lived in St. Louis; was vice president and general manager of the Le Clede Gas Light Company; that company manufactures upwards of four billion cubic feet of gas per year; and has over eight hundred miles of mains; the system covers most of the city of St. Louis. I was with that company four years, all the time as vice president and general manager. Prior to going to St. Louis, I was vice president and general manager of the gas company in Milwaukee for ten years and for nine years previous was their superintendent. I have held the position of vice president and president of the American Gas Association, which is an association of gas engineers covering generally the United States, but more particularly east of Ohio. I am also a member of the Western Gas Association and have held various positions therein, such as trustee, vice president and president. I think I was president in 1892.

I held the position of vice president and general manager in Milwaukee ten years, and for nine years previous to that I was superintendent of the Milwaukee Gas Company. Just previous to my nineteen years at Milwaukee I was with the Peoples' Gas Light Company of Chicago for two years, and prior I was with the Milwaukee company in minor positions for six years, and previous to that I was with the Toledo Gas Company one year, as engineer and laying out of the plant. I commenced the gas business in 1875, and have been at it continuously since that time. I had college training in the line of engineering at the Institute of Technology, Boston. I am now a member of the American Institute of Gas Engineers.

106 During the time that I have been in the business of making gas, and managing gas companies I have studied the question of the cost of manufacturing gas, and the several questions that enter into what should be charged for the making of gas, and I have also studied the cost of making gas in the smaller cities, such as Cedar Rapids, and I have both built and operated small gas plants and have studied the various elements that enter into the cost of making gas, ever since I have been in the business, and studied the subject over its different sides.

I think I am prepared to give an opinion as to what is a reasonable rate for gas in Cedar Rapids, the proper cost of gas and an estimate of the cost of delivering gas to the consumers in Cedar Rapids; and I think I am prepared to give an estimate of the amount that the company should earn over and above the actual cost of manufacturing and distributing as interest upon the investment in the plant.

Witness produces paper which is marked Exhibit 8, which paper is correctly set out herein as said Exhibit 8.

I have made a computation and estimate, based upon my experience and knowledge of the gas business, as to what rate should be charged in Cedar Rapids, also the amount the company should earn as interest or return on its investment. In my estimate I have had to take the price of materials and general prices paid for labor in Cedar Rapids.

EXHIBIT 8.

Coal Gas.

One ton produces	9600 c. f. gas. 1200 pounds good coke 12 gallons tar. 4 pounds ammonia gas.	
107		
One ton coal costs at $4.52 per ton	$4.52	
Bench fuel to gasify—400 lb coke at $5.50 per ton	1.10	
		$5.62
Steam	.02	
Cost of coal per M. cu. ft. of gas	.5854	
Retort house labor	.0750	
Purifying	.01	
Repair works	.04	
Miscellaneous expense	.02	
Superintendence	.0150	
		.7654

Credit Residuals.

1200 lbs. coke at $5.50 per ton	$3.30	
12 gallons tar at 1½c. per gallon	.18	
4 lbs. ammonia at 5c	.20	
Per ton of coal	$3.68	.3833
Net cost per 1000 ft. made		.3821
Net cost per 1000 ft. sold		.4153

Water Gas.

40 lbs. boiler fuel at $3.75 per ton	.0750
45 lbs. generator fuel—coke, at $5.50 per ton	.1238
4½ gallons oil at .40⅛c	.1825
Labor—gas making	.05
Purifying	.01
Miscellaneous expense	.01
Repairs works	.02
108 Superintendence	.0150
Total cost per 1000 ft. made	.4863
Total cost per 1000 ft. sold	.5286
Average cost one-half coal and one-half water gas	.4720
Cost of gas manufacture	.47720
Distribution expense	.07
Collection and office expense	.09
Promoting	.03
Taxes	.05
Injuries and damages	.01
Fire insurance	.01
Depreciation and reserve	.10
Total cost	.8320

I have prepared the estimate of the cost of gas in Cedar Rapids, designated as Exhibit 8.

In this statement I have had to take the price of materials, and the general price paid for labor by the Cedar Rapids Gas Light Company. One short ton of coal produces 9,600 feet of gas, 1,200 pounds of salable coke, 12 gallons of tar and four pounds of ammonia. This is taken from the general experience of all companies, making coal gas, in the country, more particularly applying to places the size of Cedar Rapids. I based this estimate on my general experience and knowledge of gas companies all over the country. In making this estimate of what a ton of coal will produce I have figured on Pittsburg Gas Coal.

One ton of coal costs in Cedar Rapids, $4.52, and the amount of fuel that it takes in the furnaces to gasify that amount of coal is 400 pounds of coke, which in the case of the Cedar Rapids Gas
109 Company averages $5.50 a ton in the building. They are able to sell coke at that price, delivery expense being $1.10, making the sum of $5.62; dividing this by 9,600 feet of gas per ton would give the cost of 58.54c. per thousand feet of gas produced.

Retort house labor I have figured at 7½c. per thousand. Retort house labor runs in different gas companies of the country all the way from 4c. to 14c., according to location, amount of wages paid and style of plant; 4c. being the lowest cost I know of in the most modern plant where all the work is done by machinery, and plants no larger than Cedar Rapids oftimes cost from 10c. to 12c. per M., and I arrived at this general average of 7½c., which is about an

average with such a gas works as they have here, and the labor they have.

Cost of steam I put at 2c. per M. I arrived at that by using ten pounds of coal for making steam for each 1,000 feet of gas produced, which is an exceptionally low average. It will often times run from twenty to twenty-five and showing a cost of $3.75, which I understand is the cost of steam coal in Cedar Rapids.

Cost of purifying gas 1c. per thousand, and this is a general average condition that exists almost everywhere. I did not have the exact figures of the amount expended for this item in Cedar Rapids.

Repairs of the works, that is, all repairs of the gas works including replacing of tanks, relining of boiler furnaces, and repair of the buildings, machinery, and apparatus in general 4c. per M., which is a general average figure that I believe is low enough and is based upon my general experience; for thirty years I have been paying attention and investigating repair work throughout the country and that in my judgment is a fair average cost that it will take to keep the works up to normal condition.

110 Miscellaneous expenses 2c. per M. This includes tools, waste, miscellaneous labor, such as is not included in any of the accounts.

Superintendent of the works, which means the foreman and the superior officers governing and managing the works 1½c. per M., and this is an average figure, and all cases that I know of run from 1c. per M. up. And I assume for a city of this size 1½c. would be an average and fair figure.

The sum total of this figure is 76.54c. per M. From this I deduct residuals which as shown on Exhibit 8, amount to 38.33c., which left the net cost of manufactured coal gas, delivered in the holder 38.21c. per M.

For the manufacture of water gas I have estimated forty pounds of boiler fuel at $3.75 per ton, for each M. c. f. of gas manufactured, boiler fuel means steam coke, which is based upon my observation, experience and study of the cost of water gas.

45 pounds generating fuel, in this case coke, at $5.50 per ton, which is 12.38c. per M., which estimate is also based upon my experience of the amount of fuel necessary to produce one M. of gas. 4½ gallons of oil at 4⅛c. per gallon, equalling 18.21c. per M., the amount of oil used per M., is an average figure used very generally throughout the country and is as low a figure as any one would be apt to use. I base the cost of oil upon the present contract for oil of the Cedar Rapids plant, and I believe it about an average price, some years it might be a little cheaper and some years a little more.

Labor in making water gas 5c. per M. This labor includes making gas, making steam, and in a general way includes all the labor
111 that is necessary in manufacture of water gas, not including the purifiers. It includes operating the machines and the handling of the fuel bringing in the coke and taking ashes away.

Purifier 1c. per M., which is the same as the purifying of coal gas.

Miscellaneous expense 1c. per M., which is the same as that for

coal gas, and is based upon my experience, study and knowledge of gas business, and is for tools, waste, etc.

Repairs 2c. per M. This includes keeping the apparatus, boilers, buildings, and every portion of the works in repair.

Superintending 1½c. per M., to be expended in some manner as for coal gas.

This makes a total cost for water gas manufactured and delivered in holder of 48.63c. per M.

Often the amount of gas made and the amount of gas lost makes a difference. These figures have been computed by cost per M. feet of gas sold on basis of 8 per cent. leakage, which is the usual margin among gas men in figuring leakage. I have figured it this way.

In my judgment these prices which I have given for the manufacture of coal and water gas are fair and reasonable, and each item is fair and reasonable as applied to the Cedar Rapids Gas Light Company's plant.

Taking into consideration the 8 per cent. leakage. I have 41.53c. as cost of manufacturing coal gas and 52.86c. as cost of water gas per M.

Assuming that ½ is water gas, the cost per M. of gas sold
112 would be 47.02c., according to my estimate, and in my opinion the cost of manufacturing gas in Cedar Rapids and placing it in the holder is 47.02c. per M.

My estimate also includes the cost of distribution which is: Distribution expense 7c. per M. feet, which includes maintenance of mains, services, meters, the setting, removing and testing of meters, and attending to complaints and this is based upon my knowledge of the average conditions that apply to gas works the size of the Cedar Rapids gas works.

Collection and office expenses 9c. per M. This is based upon the average condition and my knowledge of gas works during the time I have been in this business.

Promoting the business 3c. per M., which is based upon actual work that is being done by officers of the various gas companies, who are trying to promote the growth of the company, and in my judgment this is a proper and necessary charge in the making of gas.

For taxes I have taken 5c. per M., which is what the company expects their taxes will be the present year and I believe it a usual charge.

Injuries and damages I have figured at 1c. per M., which included claims for damages against the gas company for all sorts of purposes, might be an explosion or fire in a house caused by some alleged fault of the Gas company, employes may be injured and the general public may be injured, and from my experience I believe this a proper charge.

Fire insurance 1c. per M., which may include any part of the company's property, probably largely the gas manufacturing plant.

Depreciation and reserve 10c. per M. This includes
113 depreciation of the plant through a long series of years, also the plant becoming obsolete by new methods being

adopted, which makes it necessary to replace parts of the plant, covers possible improvements in the plant and supposed to cover all sorts of contingencies that are not otherwise covered. To my best knowledge of the gas business that figure is very reasonable. It is true that much of the gas machinery wears out faster than other machinery, and there are new discoveries and inventions all the time that tend to render present machinery obsolete. A well rgulated gas company has to take these matters into consideration and at the present time they are taking them into consideration.

I have examined the plant of the Cedar Rapids Gas Light Company with reference to the general condition of the plant; I believe it is in very fair condition.

In giving the statement that I have with reference to cost of gas in Cedar Rapids I have to say that in my judgment all the items which I have given are necessary charges for the Cedar Rapids Gas Company to make. The company cannot omit the consideration of any of these items. The result of omission would be dissolution of the company.

I believe that a fair and reasonable income to the plaintiff over and above the items included in my estimate of the cost of gas, would be 10 per cent. I believe the plaintiff is entitled to 10 per cent upon the cash invested in the property, and assuming that during the year 1906, the plaintiff had an investment of $400,000, and its output was 92,000 M. c. f., I would add to my figures of the cost of gas per M. about 40c., or, what would amount to 10 per cent. on the investment.

114 I believe it is necessary in conducting this business to provide for a discount; if no discount is provided, it would add to the expense in collecting, and my experience and study is that it costs more money to have collectors going about than it does to make a discount as an inducement to pay.

There is a rule with, reference to arriving at the value of the gas plant by what is known as capitalizing the output. I believe the investment of gas companies, per thousand feet of gas sold to be represented by a figure anywhere from $10 upwards.

During my experience in Milwaukee, three gas works were worn out and destroyed and the fourth works is now there in operation and that covers a period of thirty years. During my connection with the Racine works it was rebuilt; one works was destrayed absolutely.

The consumer who burns less than one M. per month is in my opinion an unprofitable consumer for the company, and the profit on a consumer grows rapidly as he comes up to two, three, four and five M. feet per month.

Gas companies very generally nowadays provide a fund for promoting new business.

Cross-examination:

I am fifty-three years old; I was nineteen when I began the gas business. I did not attend a school for gas engineers, but of civil engineering; there were no schools for gas engineers until recently.

I have been interested as a workman or superintendent in gas plants since I was nineteen; I have been and am now interested to some extent financially in gas plants. I think I am interested in three plants—one in Chicago; one in Beloit, Wis.; and at Jefferson
115 City, Mo. I was formerly interested in the plant at St. Louis and Milwaukee, and more or less at all other points, where I was employed. I was also interested finanacially at Kenosha. The plants at Kenosha and Beloit produce gas and electricity. My interest is not such as to make it desirable for me to hold the price of gas up. You can assume that, but it is not a fact. My belief is that the investment should be kept at least on the 10 per cent. basis or higher, and also on the basis of 10 cents reserve and depreciation as stated. I don't know whether that would reproduce the plant in 40 years; I should say it would about.

I have never tried to formulate an opinion as to the ordinary life of a gas plant subject to all the contingencies and expenditures that this plant is subject to; I have kept away from that because I am afraid of it. In setting aside the amount for depreciation and renewals involves to some extent knowledge as to the life of the component parts of the plant. I know enough with reference to it in a general way to form a basis, and this basis is 10 per cent. per M. The purpose of that fund would be to reproduce the plant, not only wearing out, but when necessary to displace them, that is when they get in such a condition that it is not safe or convenient to longer operate the plant in that way.

In arriving at a depreciation fund I have not valued the different parts of the plant. To my best knowledge of the business one should allow 10c. per M. Very likely that sum will more than produce the plant if set aside for a period of thirty years.

I may have met the officers of the Gas Company two or three times, but not enough to know them when I come here until
116 I was introduced to them. I have never been interested with Mr. Averill in any gas plant. Most of the gas companies belong to the gas associations, but they do not all belong.

I presume that Mr. Pratt suggested my coming to Cedar Rapids, and I went over the inventory he had prepared, with him. He did not explain the inventory particularly. I asked him some questions as to the business, and what they paid for labor; I do not question him about the valuation.

I saw the location of the plant. I think I saw Mr. Pratt with reference to the plant twice; the first time I saw him in front of the Annex in Chicago, the next time he came to my office, and I presume stayed ten minutes, two weeks ago.

My estimates of $5.50 per ton for coke is taken from what they told me they received for it through the year. I think Glenn Averill told me; I believe he said they were getting up to $6.50 for some of it, which includes hauling. It cost $1.00 to haul it.

Q. In making allowance of 10 cents per M. per annum of the value for depreciation you took an average of 10 cents per M. on the entire property, did you?

A. I took ten cents per M. In a general way I took into considera-

tion depreciation of buildings, pipes, apparatus and all that went in to make up the works, but did not consider the details at all in making my estimate of depreciation.

Q. You know what the depreciation is as a gas expert on these different items.

A. No, I don't know what the depreciation per annum
117 would be; I don't know it on holders or on gas pipes used in the ground. I don't think anybody knows. I have opinions, when it comes down to that, but don't know what it is. I have not tried to fix my opinion as to the life of the different parts of the gas plant for the reason I feel it is unsafe to do so at present. Gas holders have lasted all the way from fifteen to fifty years; what the average life of gas holders is I do not know. The only answer I feel safe in giving is that 10 cents per M. for depreciation is the lowest figure that I would feel it safe to adopt in good business methods.

Q. Why do you say 10 cents per M? Why don't you say 25 cents per M.?

A. You might say 25 cents if you wanted to, but my best judgment is that 10 cents is the lowest figure one would dare fix. I think we shall have to live to operate gas works a good many years before we find out whether that is too small or too large. I am quite sure 2½c. per M. is too small. I can cite you one case—Milwaukee. I saw three gas works completely destroyed and a fourth one is now there, in the last 40 years. I have also seen the plant destroyed at St. Louis to make room for something better, nothing was saved. It was out of date.

I think if you are going to fix a price at which you are to sell you have got to know what its cost will be through a series of years and if you are going to do that you have got to know what to allow for such purposes as depreciation. I could not quote any figures as to what the depreciation would be. The guess of a man with good judgment should not be pitted against the guess of a man with poor judgment. If you have a man capable of judging, and he gives you his judgment you can use it to such extent as you please. I have had experience in operating the gas plant at Beloit and
118 Kenosha. Beloit's output is about 60 millions a year, and Racine 100 millions. I operated that plant four years. The depreciation is to take care of various contingencies and not alone to reproduce the plant.

I would set aside about one thousand dollars a year for insurance. That is, you would build a fund which would replace such portions of the works as was destroyed by fire from time to time. I don't know of any gas plant in Iowa that has been destroyed by fire. Gas men have tried to insure their plants for many years, but the charges for insurance have been so high that they don't feel justified. In my estimate of 1c. for insurance is based on the fact that you can't insure the property for less than 1½c. per M. We had a fire at the plant in Milwaukee in 1893 and collected $2,000 insurance.

I have taken in my estimate what the company told me their taxes were this year. I did not know it was in litigation, but I

assume that it would not be changed; I assume they will uphold the assessment.

I have figured three cents per M. for promotion, to encourage people to become users of gas. Usually that money is spent in advertising, in the sale of gas appliances in which there may be a loss, in running pipes into houses at less than cost and furnishing gas fixtures in which there may be a loss, and you undertake to do this business of introducing appliances generally, for which you will not collect from customers as much as the cost to you and taking into consideration that with the advertising you lose money and gas companies find it best to encourage their business and make it grow by expenditure of such money. If you put these in as items of promotion I should not put it into the construction account.

If the company has included its arc lights in their inventory
119 of property then I would leave them out of the item of promotion; everything they have sold to their customers should be struck out.

In the estimate for office expense I include keeping books, all of the officer's salaries, and legal expenses, rendering of bills and collections, reading of meters. I think that practically covers the ground. I could not tell how much should be charged for legal expenses. I know that those details are very irregular in different companies; but I know that the sum total of 9c. is quite a low figure.

Q. If this gas company has not paid legal expense to the amount of $500 in five years preceding this litigation, would you say the amount so small as not to be mentioned?

A. I think they will make up for it this year.

But I don't take the expense of this case into consideration in making my estimate of 9c. for collection and office expense. I think that every time the company has a lawsuit that the consumers should pay the bill, they have got to any way. I would not like to say what the officers should receive as their compensation, nor the number of men required to do the work, but I get my basis from an experience covering a great number of years and by being familiar with the operation of a great many companies at different times, I have learned that 9c. covering these items is as low and fair an average as can be depended upon, but I can't give specific figures of a single company. I have given to you an average figure. Through thirty years of experience operating various companies of this size and larger, visiting various companies and comparing figures, I
120 have learned the various items grouped under this head of collections is about 9c. per M.

Q. How much of this maintenance expense would you say would be for ordinary repairs.

A. That is pretty hard to classify, to tell which is expense. You have constantly to take meters out of houses, test and repair them and replacing service pipes, you have to go out and look after pipes—perhaps you locate the trouble and perhaps not, and I have grouped it, whether repairs or expense, under the head of distribution or maintenance. I would not thing $2,000 a year for the repairs of service

pipes for this company too much. You would have to cut the estimate down if the company didn't exercise any care over the service pipe from the street curb to the house. I will admit that I am unable to say just what the depreciation on gas properties will be, but I do say that a ten per cent. allowance is in my judgment the minimum amount that could be allowed. I have probably first used that item of ten per cent. within the last three or four years. We have discussed at our gas organizations the question of depreciation. In the Chicago investigation I was called by the city to tell the facts as to the cost of gas, which I tried to do. I don't know that the books of the Chicago company show that only 6c. per M. was charged by that company to depreciation and reserve. I know that I urged before the council that it should be ten cents per M. I do not know today that the books of that company show with reference to depreciation or fixed expenses. I have no idea. You must remember that the Chicago company is a pretty big concern and there are a good many important things to do. As a general thing I don't think the prices of coal and oil have gone up materially in the
121 last year and a half. They have remained about the same. I know that the reduction—was made in price was made within three months after I testified in Chicago and I know that it was only followed by a reduction of one per cent. in the dividends in the first six months. I do not attempt to reconcile that but I would think it could be reconciled.—an increase of business would follow a reduction in the price of gas to a certain extent.

Q. And thereby reduce the cost.

A. It is apt to, in manufacturing particularly more so than in distribution. I have studied the conditions in Cedar Rapids somewhat. I should say the field for sale for gas was very well occupied in Cedar Rapids. I would think the per capita consumption in Milwaukee would be between five and six thousand cubic feet, and in Detroit about the same. I did not know that it was 6,500 in either of these places; I should be surprised if it was. I would not think that Cedar Rapids was a very big field for increase of gas business on the present population. The output 3,200 feet per capita per annum is a good fair average for a town of this size. I should say that 4,000 would be about the limit. On all the history of gas companies back for 40 years it is true that the larger the city the larger has been the consumption per capita. You would think that scarcity of fuel has a tendency to force people to use gas, but I don't know whether it does or not.

Q. Did you testify in Peoria that a ton of coal would produce 1,300 lbs. good coke, instead of 1,200?

A. No, sir. I said a ton of coal would produce 12½ to 15 gallons of tar according to the style of gas works. I think this gas works will produce from 12 gallons of tar, might be 12½. I could not swear to it, but I don't think it would produce 15 gallons.

122 Q. Then there is something wrong with it?

A. No, sir, the less tar you have the better the gas works. Tar has gone down in price for a good many years; it has gone from 5 and 6 cents a gallon to 2 cents a gallon. I mean to say that gas

plants are selling their coal tar for 2½ cents or less a gallon, and this is true of all the companies in which I am interested, and I don't know that the Cedar Rapids Company sold its tar last year for 3½ cents a gallon, and if they sold their ammonia for more than 5 cents a gallon, they got more than the market value of it.

I don't think there is much difference between Cedar Rapids and Peoria. I said 12½ to 15 gallons; that is quite a lee-way, so far as gas is concerned. Of course they had a brand new works of the very best and highest type of benches, and it seems that I did allow a little more gas per ton of coal there than I did here. I think one may fairly assume that when you are manufacturing the largest quantity of tar out of a ton of coal it is because you have got your benches running under the highest haste and the tendency is to make the lesser amount of tar, but it does not always follow. There is two-thirds as much coke as coal and about 12½ per cent. of that is dust, dirt, etc., and that would not leave over 1,200 pounds of good coke from a ton of coal. Ten years ago we used to consider that 13 per cent. of the coke made would answer the purpose for fuel in the benches for producing gas; since that time we have made very careful tests as to the number of pounds of fuel used to produce that gas, and the result I give you now is from that experience, or careful test made in that respect. I testified in this case that the allowance for bench fuel would be 400 pounds, and on the make of 1,200 pounds of coke per ton of coal that would be 33⅓
123 per cent. I think I testified at Peoria that "the boiler fuel for the same quantity I would figure at 25 lbs. per M. feet and the bench fuel at 40 lbs., or 25 to 30 per cent of the coke manufactured, and it seems to be very close to the figures furnished for Cedar Rapids. We have learned a good deal in ten years as to the actual amount of fuel and hardly any company was weighing their fuel at that time. Now we have gotten at it by weight so that we know.

I know Addix and Humphreys. I think they are authorities on the cost of producing gas. If they should testify that the cost of all fuel which is used in manufacturing gas had risen since 1905, I would think them correct, but their testimony was in the east and conditions are different there. In 1902 to 1905 there was a good raise in the price of fuel.

I am not giving the exact figures of Chicago because I don't remember them, and because I don't think it has anything to do with this case out here. I don't try to carry the great mass of figures; there are millions of figures, and when I want to find out anything I go and find out for the time being.

I have testified in a number of cases, but I never went into any case and testified as to the affairs of any other company. I have been connected with ten or a dozen gas companies. I left Milwaukee in the spring of 1903, after being there for 26 years; while I was there the price was reduced from $2.75 a thousand to one dollar for lighting and 80 cents for fuel. I think the average price in Milwaukee now is a fraction under 80 cents. The rates in St. Louis are $1.00 for light and 80c. for fuel. I don't remember what it cost to

manufacture gas in St. Louis when I was there. I don't
124 know today just what it cost me at any one year or time at St. Louis or Milwaukee to produce and distribute gas.

I have testified that I would set aside 1c. a thousand for insurance, this would not cover liability insurance of employés. I don't know just how much fire insurance should be carried on this plant.

When you sell a consumer 20,000 ft. of gas at a price that renders you some kind of a profit and you sell him additional gas through the same month, the cost of the additional gas is not so great as the first gas you sell him. Your additional cost is for your material and labor but the additional cost of distribution is not as great. The gas furnished in St. Louis at 60c. was not furnished at a profit to the company.

I don't think this plant is of a very inferior order. They have some new floor benches down here and they have some older ones with six to the bench. I wouldn't suppose they could manufacture gas a great deal cheaper than they do now. I didn't see anything in the plant that I would change materially to produce gas more economically.

Q. Then you would not take much off of the actual cost of this plant for depreciation?

A. So far as the results gotten today I wouldn't; so far as actual value of the property I think you would have to, but I don't know how much, so far as the actual results to be obtained in the manufacture and distribution of gas today, I wouldn't take much off from the value of the plant.

I think this plant would be worn out and done away with sooner than a brand new plant if it stood there today, but I don't
125 know how much sooner. The plant is as now constituted adequate to meet the demands of the present and immediate future, that is for the next three or four years. The capacity of the coal gas apparatus is about 400,000 and of the water gas machines about 750,000. The capacity of the whole plant is 11,500,000 a day, but of course it needs a little more machinery to turn out that much gas. I think it would need new purifying apparatus and additional holders and other machinery; I would not say off hand what. I made *on* investigation as to that.

Q. Don't you know that you are drawing the largest salary of any gas man in the country for simply knowing nothing with reference to the items that goes into the manufacture and distribution of gas?

A. I don't know any part of that statement. I don't know that I draw the largest salary of any gas man in the country.

The oil I figured on was such as gas companies can use for gas making. I think they can use anything from crude oil up to refined gasoline. My estimate is based on crude oil or gas oils sold for the purpose. The lower grade of oil is usually the cheaper. My estimate provides for about 22 candle power for water gas and 16 to 17 candle power for coal gas.

The rule with reference to capitalization of population would apply to building a new plant. You could not use such rule where

the plant has grown up with the city but it is probably costing as much. Following that basis and putting the investment at twenty dollars per capita you would have a plant in Cedar Rapids worth six hundred thousand dollars.

126 I don't think the cost of building up this plant through a long series of years would be as much as it would cost to reproduce it largely because through this long series of years this business has come to it without expense on the part of the company to get it, whereas if you are going to reproduce this business, it is going to cost money.

Q. You stated that you rebuilt the plant at Milwaukee three times.

A. Yes, sir, all the machinery, purifiers and holders were destroyed or practically so. There were four holders destroyed, ranging from 100,000 to 400,000 feet capacity. We destroyed all the buildings and manufacturing plant, also station meter but not the street mains. The first change in the Milwaukee plant was made between 1878 and 1880, the next 1887, the next in early part of 1890 and the latter part of 1900.

There is not likely to be such changes in Milwaukee in the next 20 years as there was in the last, and there is no likelihood of such changes here in Cedar Rapids.

Redirect examination:

My estimate of one ton of coal produces 9,600 cubic feet of gas, 1,200 pounds of good salable coke, 12 gallons of tar and four pounds of ammonia is taken from general experience of all companies in the country making coal gas, more particularly applying to places the size of Cedar Rapids, and I have taken it from my own general knowledge of gas companies all over the country, and this constitutes the amount of product that is produced from one ton of coal.

127 The item of superintendence might include a portion of the managers' salary. If they had a capable superintendent in the works who was thoroughly competent to run it without help, I don't think this would, but if a man in this capacity has to be assisted, such labor would probably be charged to that account. By deducting residuals, I mean deducting the amount received for coke, tar, ammonia, etc. I deducted $3.68 for each ton of coal used, which equals 38.33c. per M. feet of gas produced. The details are 1,200 pounds of coke at $5.50 per ton, is $3.30; 12 gallons of tar at 1½c. per gallon, is 18c.; 4 pounds of ammonia at 5c. per pound, 20c.

My item of $3.75 (in manufacture of coal gas) includes the unloading of the coal in the yard, but not bringing it to the boilers.

The coal gas that has cost 38.21c. per M. feet made, taking into consideration 8 per cent. of that cost, is unaccounted for, has cost 41.53c. for gas sold and in the case of water gas that has cost 48.63c. per M. of gas made, has cost 52.86c. per M. sold.

My experience has been that it cost more money to have collectors going about among the people than it does to have a discount as an inducement to the people to pay.

In my opinion the rate should be such that it would justify the investment of at least 5c. per thousand cubic feet of gas sold. My figures have been given in the form of a written schedule which is marked Exhibit No. 8. (Plaintiff offers in evidence Exhibit No. 8).

Cross-examination:

The Stephens Institute of Hoboken, N. J., is a school recognized as teaching gas engineering more than any other. It turned
128 out a number of good gas engineers as long as ten years ago. They may not have a course of gas engineering but just mechanical engineering—and have only instructed along the line of gas engineering for a year or two. It is not a fact that my interest in the question of manufacturing and distributing gas is such financially as to lead me to want the price or value of the property increased and I am not interested in holding or attempting to hold up my investments in these properties.

I have testified that the plant should produce an annual return of at least ten per cent., and my belief is that the investment should be kept on that 10 per cent. investment or higher. I have never given testimony against a gas company where an attempt was made to reduce the price of gas in any company in which I was interested in.

I don't know what is the ordinary life of a plant like the one in Cedar Rapids, subject to all the contingencies and expenditures this plant is subject to. I have never tried to formulate an opinion as to years of life; I have purposely kept away from that because I am afraid of the question. In setting aside the amount that I have for depreciation and renewals it involves to some extent a knowledge of the life of the component parts that go to make up a gas plant. I don't know the life of the different parts in a very definite way, but I know enough in a definite way to establish a basis upon which to base my judgment, and as applied to the Cedar Rapids plant assuming that it produces about 92 millions of feet per annum, I would have $9,200.00 set aside as a depreciation and renewal fund. The purpose of that fund would be to reproduce the plant, not only wearing out, but when necessary to displacement, that is, when they got in such condition that it was not safe or convenient to operate it.

129 I know there are a great many gas companies that don't have membership in the Gas Institute or Gas Associations. I cannot name any of them. I have never been interested with the Averill's in any gas plant. I don't remember when I first met Mr. Averill. He told he visited me in Milwaukee some 25 or 30 years ago, but I don't remember it. I never met him that I remember of. I did not consider the details at all in making this estimate, nor the length of time the buildings had been in operation.

Q. You draw a close distinction between your knowledge of what this plant and its component parts and what your opinion is with reference to the plant and its component parts.

A. Yes, sir. I might give an opinion, with reference to the depreciation on the cast iron mains.

Q. Don't you think it is folly for a man of your experience and intelligence to say it actually requires 10 cents per M., when no man knows what the depreciation is?

A. I am asked to express my best judgment and that is what I have replied. That is the only answer I can give.

Q. As a matter of fact there are no records kept, and your experience would not aid you at all in arriving at what was a proper sum for depreciation of this gas plant in Cedar Rapids?

A. That is right: I would not attempt to say what the depreciation of the component parts of this plant would be. I would not say under oath what the actual depreciation would be; I could not quote you any figures beyond my best judgment of what they
130 would be, and that best judgment is based upon the amount I believe would be the fair rate to adopt by all gas companies. There is no scientific principle controlling it.

Q. That would be the guess of one man pitted against the guess of another?

A. For you to get the best judgment of as many men as you could get. The guess of a man with good judgment you would not like to pit against the guess of a man with poor judgment. If you have a man capable of judging and he gives his judgment, you can use it to such extent as you wish.

The works may become obsolete through improvement of the methods of gas manufacturing and any portion or all your works may go out of date in a very short time. I say this is possible on general experience and this general experience based upon towns with the rate of growth that this town has had. I did not try to apportion the amount of the 10 cents per M. that I have allowed for depreciation. I would allow on account of the plant becoming obsolete and I don't know how much a year should be allowed for this contingency, and my experience for 30 years does not give me a definite idea or opinion in regard to it. I don't know how much of it I would apportion for buildings and grounds, or to the retorts, water gas apparatus, the mains or any of the other pieces of apparatus.

Actual depreciation is where the plant is worn out and has to be reproduced. I could not tell how much of the 10 cents per 1,000 would be set aside for actual depreciation. I figure 10 cents as low as good business princi*pals*. I figure in a general way from
131 my experience in the business and it is not possible to figure it in any other way.

I only figure it in my judgment. I exercise my judgment about it. I don't take the several parts and figure so much on each.

I know that in Chicago they set aside funds for depreciation, what the amount is I don't know, whether one or ten cents per thousand is set aside for depreciation.

I wouldn't say off hand how many men it takes in the office to keep the books of a company manufacturing annually about 100 million feet of gas. I would not try to make those figures because it would only complicate the situation by so doing and I would not do it. I give you an average figure that I know is correct and you can

figure it any way you want to but you can't get away from that figure. It is based on facts. Through 30 years of experience operating various companies of this size, and larger, visiting various plants around the country, in comparing figures, I have learned that these various items grouped under the head of collections amounts, in companies of this size, to about 9 cents per thousand. I can't give you any specific company because I have got that experience through a great many years, and you have certain things in your mind but can't carry the figures of each company. I don't believe I am called upon to fix the salaries of plaintiff's officers, out of or in court. The salaries in one company might be high and in some other direction low, and yet the general average of figures would come out about the same.

I have testified that the distribution expense should be 7 cents per 1000 cubic feet. That includes all expenses in the care of the mains, services, meters, and attending to complaints of cus-
132 tomers. I also referred to this as maintenance expense. I depreciation used the two words, distribution and maintenance interchangeably. It is pretty hard to tell how much of this maintenance expense would be for repairs and what for renewals. You have to constantly take meters out of houses, bring them to the shop, test, repair and replace them, and is it repairs or expense? You have constantly to be repairing your service pipes; you might call that repairs. You have to go out and look after pipes—perhaps you find the trouble and maybe you won't—it is a question whether it is repairs or expense. Possibly 2 cents would be charged for service pipes and connections.

I have admitted that I am unable to say just what the amount of depreciation on gas properties will be, but I do say that a ten per cent allowance for depreciation and reserve is the minimum amount that could be allowed and is fair and reasonable. I probably first used that 10 per cent. depreciation within the last three or four years. It may be that I used it first in Chicago before the city council. The subject has been discussed among gas men for a number of years and after a discussion of that subject the best opinion we have arrived at, is that 10 per cent is a fair allowance. Possibly we discussed that subject at our meeting but have not agreed upon putting that in as an item to be allowed.

I was called by the city of Chicago to testify, to tell the facts which I tried to do. I wasn't against anybody. In my letter to the committee of the council of Chicago, I think I said that the total cost to produce and distribute gas in the city of Chicago was 98.67 per M. c. f. of gas sold, including interest and dividends, and in that sum I later computed this 10c. per M. c. f. for maintenance and
133 reserve. I did not know and do not know now that the books of the company showed at that time that there was only 6c. per M. c. f. charged for depreciation and reserve. I urged before the council that it should be 10c. I mean to say that I do not know today what these books show with reference to depreciation and maintenance expense. I have no idea of it.

Q. Do you mean to say that you never read the following report:

"CHICAGO, *June* 26, 1906.

"Hon. N. H. Judd, Chairman Committee of Gas, Oil and Electric Light, Chicago.

"DEAR SIR: Replying to your communication of even date, I wish to advise you that there is 6.43c. per thousand c. f. included in the figures for renewals and repairs for the year 1904 and included in the figures for depreciation and repairs, as shown in the books of the Peoples' Gas Company.

Yours truly,

MARWICK, MITCHELL & CO."

A. I don't know that I ever read it before. I have not since I have been vice president attempted to employ the figure of 10c. per M. c. f. for maintenance and reserve. I have not made any attempts in that direction in one way or the other. You must remember that Chicago is a pretty big concern and there are a good many important things to do. I am not called upon to say whether my services were of value to the city of Chicago or not, in the light of the fact that after the report of mine stating cost of gas at 98.07c., the company voluntarily reduced the price 15c., if they did so reduce it,
and they paid dividends of 6 per cent. I made the figures as
134 to what the cost would be and added to that the proper depreciation, interest and dividends and got the cost as I found them. My advice was not misleading; it was correct. In my opinion I gave what the true, actual figures of costs were. I don't know that the price of coal has been going up during the last year. I believe the plaintiffs told me they paid a little less for coal this year than they did last year, but as a general thing I think the cost of materials have remained about the same and have at least not gone up in the last year and a half. The reduction in the prices in Chicago was made within three months after I testified, and it was followed only by a reduction of one per cent. in the dividends in the first six months; and I think there was a resumption of the 6 per cent. dividends within one year. I think that reduction could be reconciled with my testimony but I don't attempt to reconcile it. The business may have increased and increased the operations of the company. The business is apt to increase by reduction of rates to a certain extent.

I should say that the field for furnishing gas in Cedar Rapids was very well occupied.

I was formerly connected with the Milwaukee plant. It and the Detroit and Grand Rapids plants are owned by the same syndicate. I would be surprised if the per capita consumption in those cities is about 6,500 c. f. per annum. I think that 3,200 c. f. per capita, is a good fair average for a town of their size, and that the limit would be about 4,000. There is about the difference of 4,000 and 6,000 between all large and small cities. On all the history of gas companies back 40 years, the larger the cities the greater the con-

sumption per capita on the average. Coal is higher in Cedar Rapids than at Milwaukee or Detroit.

135 In giving my figures on a ton of coal producing 9,600 c. f. of gas, I have reference to a short ton.

I am not giving the accurate figures of Chicago because I don't think it has anything to do with this case out here. I could tell from the books at Chicago in five minutes what it cost to produce and distribute gas but I don't carry the great mass of figures; when I want to find out anything I go and find out for the time being and don't try to carry it about. I have testified in a large number of cases and I never went into any case and pretended to know the affairs of any other company. I have been connected with perhaps ten or a dozen gas plants. I don't think I have ever testified giving the exact figures of any one company but have based my evidence on my experience.

I don't know that I made a report to my directors in St. Louis that showed I had manufactured and sold gas in St. Louis and distributed it at less than 60c. a M. c. f. Gas was not manufactured and distributed in St. Louis while I was there at less than 60c. I don't know at present what the figures were in St. Louis; I have no definite idea. I was employed there for four years. After you sell a customer 20,000 feet of gas at a price that renders you some profit and you sell him additional gas during the same month, the cost of the same, the cost of that additional gas is not so great as the first gas you sold him, the additional cost of distribution in that case is not so great.

Q. In what respect is this plant worth less than a new plant?

A. It would be worn out and done away with sooner than a brand new plant. I don't know how much sooner, that is one of the

136 things I don't know how to figure. I think it is fair to assume that this plant will meet all the demands for three or four years. The daily capacity is about 750,000. The water gas machines would turn out 750,000 and the coal gas 400,000, but the works won't turn out that much; it would need some other machinery.

In Milwaukee three were destroyed, and the fourth is now there and in operation; this covers a period of thirty years. During my connection with the Racine works it was rebuilt, one works being destroyed absolutely.

There is a class of customers known as unprofitable customers; they would be those who use less than 1,000 c. f. a month. The profit of a customer grows rapidly as he comes up to two, three, four or five M. c. f. per month.

In arriving at that amount for taxes I assumed that the present assessment would stand with the usual rate of levy.

In my judgment 3c. per M. c. f. is a proper amount to set aside for the purpose of promoting new business, and I would leave the method of expending it to the judgment of the company's officers. Companies very generally provide such a fund. I do not believe the increase of consumption will be as rapid in the future two or three years as in some cities where the consumption per capita has been

less. The figures indicate that there has been a good growth in Cedar Rapids.

If asked to state what the investment in Cedar Rapids should be I would say about $2,000 per capita to reproduce the business of the company as a growing business.

Figuring on this basis the plant in Cedar Rapids would be worth
$600,000, and perhaps 25 per cent. of this would be in estab-
137 lishing the business, leaving the physical value at $450,000.
I know Mr. Pratt and know he has a pretty good knowledge as to the value of gas plants. There is a perpetual franchise in Milwaukee.

J. C. MARKLEY, being sworn testified on direct examination as follows:

My age is thirty-six years; I reside in Chicago; have resided there four years; my business is managing operator of a number of gas plants; my business and office is in Chicago, and the plants are located throughout the country in various cities and states. One plant is located at Ft. Madison and one at Waterloo. I have been connected with gas companies for eleven years. I was first employed as clerk in the gas office in Milwaukee. I was in Milwaukee two years; from there I went to Beloit; that was in 1898, where I was manager of an electric light plant; I was there between two and three years. Then I returned to Milwaukee, where I was employed as statistician with the Milwaukee Gas Light Company, and then I was employed by a bond house.

As statistician my business was to take the figures, costs and results of various parts of the works and distribution system, etc. My employment with the bond house was visiting gas works and electric light plants, making examinations and reports of condition; my examinations include the physical properties and books so far as to find out the financial condition of the company. I was with the bond company 1½ years with headquarters at Milwaukee.

My present work and duty is practically confined to the engineer-
ing part of the business in the construction work and the
138 operation of the plants, comparing one plant with another,
and determining the proper results in the different places, and fixing standards for them to work to. I visit each plant frequently.

Q. Mr. Markley, have you made a computation of and are you able to give the cost of manufacturing gas in Cedar Rapids, based on the averages of the companies that you are managing?

A. Yes, sir. I have prepared such an estimate, based on the cost in our thirteen companies.

Exhibit No. 9.

Portion of Coal Gas Cost.

One ton Youghiogheny at 4.75 cu. ft. of gas per lb.:

9,500 cubic feet of gas
1,200 lbs. of coke
4 lbs. of ammonia
12 gallons of tar

Cost of coal ..... $4.52 per ton

Cost Per M Cu. Ft. of Gas Made.

Gas coal		.475
425 lbs. of bench fuel, at $5.50		.1168
Total materials		.5918
Less residuals:		
1,200 lbs. of coke at $5.50 per ton	.3473	
12 gallons of tar at .01¾	.0221	
4 gallons of ammonia at .05	.021	
		.3904
Net cost materials		.2014
Retort labor		.1061
Bench repairs		.02
Cost in retort house		.3275

139 *Portion of Water Gas Cost.*

Water gas steam	.0279
Generator fuel, 40 lbs. at $5.50	.11
Oil, 4.3 gallons at .0408 per gallon	.1754
Total materials	.3133
Gas making labor only	.0272
Repairing linings and checkering water gas apparatus	.008
Total in water gas house	.3485

Balance of Cost, Including Both Coal Gas and Water Gas.

Cost Per M Cu. Ft. Made.

Mixed gas steam	.0192
Purification	.0073
Manufacturing labor	.0116
Manufacturing supplies	.0168
General works repairs	.0110
Total mixed gas items	.0659

Total Cost Per M Cu. Ft. Made.

Coal gas in retort house	.3275
Water gas in water gas house	.3485
Cost of 2 M. cu. ft.	.6760

Average Cost of Mixed Gas in Holder.

Considered that one-half of each is made	.3380
Plus mixed gas items	.0659
Total cost in holder	.4039

140	Amount of gas made	1000 cu. ft.
	Average leakage 8.7 per cent	87 cu. ft.
	Amount of gas sold	913 cu. ft.

Cost of gas in holder per M. cu. ft. sold		.4423
Distribution labor and supplies and steam for compressors, including repairs to distributing system		.0704
Salaries officers		.0283
Accounting department		.0563
Office supplies and expense	.1741	.0219
Canvassing and advertising		.0314
Rent		.0159
Stationery and postage		.0114
Stable		.0089
Insurance		.0115
Taxes	.0609	.0433
Legal expense		.0061
Total of above items		.7477
Depreciation per M. cu. ft. sold		.1395
Total cost of consumers' burner		.8872

Details of Depreciation Items (Not Included in Daily Operating Repairs).

Works.

Real estate	$36,500.00			
Building, brick	22,995.00	2	per cent.	$ 459.90
Building, frame	4,111.00	5	" "	205.55
Holders and wells	64,835.00	3	" "	1,945.00
Retaining walls, etc	4,000.00	12	" "	80.00
Benches	16,550.00	15	" "	2,482.50
141 Water gas apparatus (old)	4,500.00	10	" "	450.00

Engines, blowers and retort tools, etc.	697.00	6	"	"	41.82
Boiler plant	2,470.00	8	"	"	197.60
Station meters and instruments	2,802.00	5	"	"	140.10
Scrubbers and condensers	8,970.00	4	"	"	394.80
Exhausters and compressors	2,525.00	6	"	"	151.50
Purifier boxes	5,000.00	4	"	"	200.00
Pumps	230.00	10	"	"	23.00
Street governor	625.00	6	"	"	37.50
Scales	200.00	10	"	"	20.00
Yard connections	1,476.00	2	"	"	29.52
Tools at works	582.50	10	"	"	58.25
	$179,968.50				$6,917.09

Distribution System.

Street mains	$119,856.00	2	per cent.	$2,397.12
Services	15,289.00	6	" "	917.34
Meters	29,384.00	8	" "	2,350.72
Arc lamps	3,575.00	10	" "	35.75
Teams	1,185.00	6	" "	71.10
Office furniture	1,866.00	8	" "	149.28
Meters in stock	562.00	8	" "	44.96
	$171,717.00			$5,966.27

Total depreciation works	$6,917.09
Total depreciation distribution	5,966.27
	$12,883.36

142 $12,883.36 spread over annual sales of 92,306,000 cubic feet ..... 1395 per M.

J. C. MARKLEY.

In the manufacture of coal gas I have assumed, or rather taken as a fact that Youghiogheny is the class of coal that is used, and our general average amounts to $4.75 per ton of coal, which equals 9,500 feet of gas, and one ton of that coal produces 1,200 lbs. of coke, also four pounds of ammonia and 12 gallons of tar. I have taken a cost of coal as given me here by the Cedar Rapids company. The 12 gallons of tar is a figure we have used for the four years I have been connected with the plants, and in the 12 gallons of tar is covered any leakage or loss. In our plants we do not recover the ammonia at all for the reason that in the smaller plants it requires extra labor to operate the ammonia still and by the time you are through with it there is very little profit. The manufacturers of ammonia will give you a guarantee of five pounds of ammonia per ton of coal, and I have taken 25 per cent. of their guarantee, because in the general operation of any apparatus after it has been in use for a period

of time, there is a certain loss as to the tar. I will say at the end of the year, when you take an inventory of the sales, the amount comes out fairly accurate; of course, there is no way of measuring tar on hand, except to take the depth of the wells. I would say that these estimates would be a fair and correct amount to apply to the plant in Cedar Rapids one month after another.

In the bench fuel used for heating the benches, I have taken our average for twelve months, covering thirteen plants, which results in 425 pounds of coke per ton of coal carbonized and the cost to the Cedar Rapids plant I am told is $5.50 per ton. The cost of
143 the coal gas per thousand cubic feet of gas made is .475, which is based on 9,500 feet of gas per ton, and the coal $4.52 per ton, and this is based on the average of these companies. The results in gas per ton of coal carbonized is based on our results and the prices at which I have figured are the prices paid by the Cedar Rapids company, which makes coal gas .47½c. The bench fuel 11.68c. brings the total materials 59.18 c. per thousand feet of gas made. From this I deduct 1,200 pounds of coke at $5.50 per ton, which is the figure I am told is gotten in Cedar Rapids. I have figured the tar at 1¾c. a gallon, and ammonia at 5 per pound that makes a total deduction for residuals of 39.04c., bringing the net cost of materials to 20.14c.

The retort labor I have based upon the experience of our various plants, covering a period of twelve months, which is 10.61c. The bench repairs figure 2c. per thousand, bringing the total in the retort house to 32.75c. per M of gas made.

On the water gas I have taken the materials and labor and the average results. The first item is steam, used for instance in making water gas and for pumping the gas from one holder to another, and for various other purposes about the works for keeping the seals in the holders thawed, and our average for water gas was 2.79c.; our average generator fuel is 40 pounds of coke per thousand cubic feet of water gas made at $5.50 per ton, amounting to 11c. In this coke I have used the price that the Cedar Rapids company is getting for coke. Our average for oil shows 4.3 gallons and I am told that the cost of oil in Cedar Rapids is 4.8c., which amounts to 17.54c. per thousand feet of water gas made; this brings the total materials to 31.33c.

The next item is gas making labor; our method of making
144 charges to that account covers simply the water gas operator; the operators are the men who handle the machines and make the gas, but does not include the men who wheel in the coke.

The next item is the daily repairs to the water gas apparatus, which includes the lining and checkering of the machines, small items of repairs about the valves, etc., and the lining includes the brick tile next to the shells, and amounts to 6.8c.

That brings the total of water gas in gas house 34.85c., that is when the gas leaves the machine.

This does not include the scrubbing and purifying nor the other items after the gas leaves the retort house and the water gas house, for we consider it as mixed gas then, and in that we have a division.

The first item in that is steam which amounts to 1.92c. per M of gas made. The item of steam includes labor of foreman and that portion of the fuel used in the pumping of gas from one holder to another, steam used in the holders for keeping the seals thawed out, and such items of steam as are not covered in the other items.

The cost of purifying will depend upon the size *of* capacity *of* the purifier boxes. The purifiers in this plant, are not modern, in the respect that at the present time, they are building boxes much deeper. For instance boxes twice as deep will give twice as much capacity, and the capacity and purifying will be increased at the same ratio.

The next item I have is miscellaneous labor about the works, which I have estimated at 1.16c. and repairs 1.1c., which item is based upon the average experience of companies I operate, manufacturing supplies I have at 1.68c., and the total of this group
145 of charges amounts to 6.59c. per M of gas made. These figures simply represent the actual costs as covering the actual amount of each kind of gas manufactured. I have taken the average I had before me, so it is the actual expe-ditures divided by the total amount of gas made.

This gives the total cost for coal gas in retort house as I have stated of 32.75c., that is after deducting residuals, and the total cost of the water gas is 34.85c., and an average of the two would be 33.8c. and to this I add 6.59c. for the group of charges mentioned before and this gives a total of 40.39c. per M c. f. in the holder. This does not allow anything for the leakage, or unaccounted for gas.

My experience is that leakage varies in different plants, and I have taken the average in our plants, covering the same period as to the other figures, and the average was 8.7c., or a loss of eighty-seven cubic feet of gas per thousand feet made, and that would leave out of every thousand feet of gas made, nine hundred thirteen feet for sale. Now taking the leakage out, I arrive at the figure of 44.23c. as the actual cost of the gas sold, this cost being the cost in the holder, and this is what in my opinion it costs to produce the gas and place it in the holder, based upon my experience with the thirteen companies of which I am manager, except that I have used the prices of coal and coke as they obtain here in Cedar Rapids.

Q. You may now explain the figures in your exhibit relating to distribution.

A. The items of distribution in our gas works, cover labor and supplies necessary for making the daily repairs to the distribution system, and also for the steam used in compressing gas, and that
146 figure amounts to 7.4c. per M feet of gas sold. This figure is based upon the average experiences of these thirteen companies. The other items cover office expenses. In the plants the size we operate we charge a portion of the superintendent's salary to the works and a portion of it to the distribution system.

The salary of officers amount to 2.82c., the accounting department 5.63c., the office supplies and miscellaneous expenses of the business 2.19c., advertising and promotion 3.14c., rent 1.15c., stable .89c.,

and the total of these items amounts to 17.41c., and are all based upon the average experience of these thirteen different companies.

There is another group of items over which the company has very little control, which includes insurance, taxes and legal expenses. For insurance I have figured 1.15c.; taxes 4.33c.; legal expenses .61c., the total of these items being 6.9c.

This makes a total cost for manufacturing and distributing gas of 74.77c. per one thousand cubic feet of gas sold.

To this cost should be added for depreciation of the plant. I have been furnished with an appraised valuation of the property of the company, which appraisement is divided into various items and I have figured depreciation on each one of these items separately, and in arriving at my basis for these figures I have taken what I consider to be a fair average life, and after figuring the depreciation on each one of the items I have divided it by the total amount of gas sold, and it brings the figure of 13.95c. per thousand feet of gas sold. This added to the cost of gas distributed makes a total of 88.72c. per thousand feet of gas sold as the cost at the burner.

In my judgment capital invested in gas works should bring
147 a return to the investors of a little more than any ordinary manufacturing enterprise which usually would be considered from 10 to 12 per cent on the investment.

I stated that in making up my table of depreciation I divided up the several items of machinery and apparatus going to make up the plant; the several items may be stated as follows, to-wit:

Real estate I have not figured any depreciation at all, on all other items I have taken as the valuation of the machinery or apparatus the estimate of Mr. Pratt as shown in Exhibit 45, and have assumed that to be the present valuation of the property.

On the brick buildings which Mr. Pratt valued at $22,995.00, I have figured an annual depreciation of 2 per cent., which amounts to $459.90; on the frame buildings I have considered 5 per cent. a fair depreciation, which makes an annual amount of $259.55; on the holders, tar wells, etc., I have taken an annual depreciation of 3 per cent, which amounts to $1,904.45; on the retaining walls 2 per cent., or $80.00; on the benches 15 per cent., or $281.50; on the old water gas apparatus 10 per cent., or an annual charge of $150. On the engines, blowers, retort boilers, 6 per cent., or $41.82; the boiler plant 8 per cent. or $197.60; station meters and instruments 5 per cent. or $140.10; scrubbers and condensers 4 per cent. or $301.80; extractors and compressors 6 per cent. or $151.50, purifier boxes 4 per cent. or $200.00; pumps 10 per cent. or $23.00 annually; street governor 6 per cent. or $37.50 annually; scales 10 per cent. or $20.00; yard connections 2 per cent. or $29.52 annually; outlet at the works 10 per cent. or $58.25 annually, which makes an annual charge to cover depreciation and final decay on the gas work proper of $6,917.09.

148 On the distribution system I have taken as prepared by Mr. Pratt, and shown a depreciation of 2 per cent. or $2,397.12 annually; services at 3 per cent. or $917.34 annually; meters at 8 per cent. or $2,350.72; arc lamps 10 per cent. or $357.50; teams 6

per cent. or $71.10; office furniture 8 per cent. or $141.28; also meters in stock 8 per cent. or $44.90 annually. That makes a total of $6,288.02 in the distribution system and a grand total for the entire plant of $13,205.11; this amount distributed over the annual sales of last year of 92,306,000 cubic feet of gas would make 13.95c. per thousand cubic feet of gas, which in my opinion should be earned as and for depreciation.

It is my opinion that it is necessary for the company to provide some method of discount in order to get a prompt payment for gas bills. If a discount system were not in use the company would have difficulty in getting its money, and in making its collections, and it would have to employ collectors to bring the money in, which would be an extra expense. In one of our plants where we have no discount for prompt payment, the company is embarrassed by not having its funds, and we have to scratch around to get the money.

The thirteen companies which I operate vary in size; some are larger and some smaller than this in Cedar Rapids, but the general average would apply to Cedar Rapids.

The American Gas Institute is an amalgamation of a number of associations, including the Western Gas Association, Ohio Gas Association, American Gas Light Association, which were merged about two years ago, and had its second meeting October, 1907. The purpose of the organization is mutual benefit and improvement of members; we meet and discuss methods of manufacture, distribution, best methods of serving patrons, and the study generally of
149 advanced methods and ideas in gas matters. There is nothing said or done with reference to keeping up the price of gas. Any person may attend the sessions, including the social sessions; even Mr. Jamison if he has the price.

Brown's directory is based upon estimates of what the company expects to do, and is published a year ahead of what it purports to be. My computations are based upon actual results from the companies I am operating. In my work as statistician for the Milwaukee company I dealt entirely with the books of the company for my figures. I would simply take the figures. I would simply take the figures that the books showed.

In my schedule of depreciation the amount that I have allowed for depreciation is based upon my experience during the whole time that I have been employed by the Chicago company and all the time I have been in the gas business while I was working for the bond company I had opportunity to observe the conditions of machinery that had been in operation for different years, and I made a study of that subject. It is absolutely fair that some provision should be made for the replacement of the plant when it is worn out. If no provision was made for the replacement of the physical properties as they wear out, the time would come when the plant would be gone. It would not make any difference whether this amount allowed for depreciation was put into a reserve fund or put back into the plant. If put into a reserve fund, the company would have to secure money elsewhere. I know of no manufacturing business where machinery does

not become obsolete, and gradually wear out and has to be superceded by new machinery.

The gas holders used to be made of iron; now they are
150 made of steel and the steel gradually wears out by being subject to atmosphere, and after a time a gas holder that has been in use for years, you will find the top full of little pin holes, through which the gas escapes and in time the holder must be replaced.

In my judgment and experience this computation which I have given in reference to depreciation is a proper one to apply to the Cedar Rapids plant, and is my best judgment as to the amount that should be earned for depreciation.

Cross-examination:

The name of the company I am working for is the Metropolitan Gas and Electric Co., and is located in Chicago; R. C. Dawes is president; Henry M. Dawes, vice president; H. B. Hurd, secretary. It is not a trust. The thirteen companies I have taken as the basis of my figures are located at Waukegan, Chicago Heights, Ill.; Hammond, Ind.,; Wausaw, Wis.; Little Rock, Ark.; Waterloo and Ft. Madison, Iowa; Texarkana, Austin and Beaumont, Texas; Jacksonville, Fla.; Mobile, Ala.; and Benton Harbor and St. Joseph, Mich. I cannot give you a complete inventory of the properties of these companies or the exact number of miles of mains at Waukegan. The mains are wrought and cast iron and are laid largely in sandy soil; we manufacture water gas only there and have between four and five thousand consumers and about that many meters; the company takes care of services. We rent our lamps at some of our plants but I cannot give the number of lamps rented out because they are so numerous; I do not remember the figures.

When I made up my figures given in my schedule, Exhibit 9,
I had the results of each of these plants before me. I think
151 we sell about 120 million feet of gas annually at Waukegan and this plus the leakage would represent the amount manufactured. We charge all unaccounted for gas to leakage. We use the same system of bookkeeping at all the plants, the classification of accounts is what I prepared for them four years ago. And is the classification indicated by this schedule, Exhibit 9, and under the different heads of this schedule of different items our books show the various items analyzed. I could not tell exactly how many men are employed in the offices at Waukegan; the general manager draws a salary as does his assistants. There is no rule as to the number of men that are required, or are essential in the manufacture of a certain amount of gas, because some gas companies will carry on a large merchandise business and another will not. One company will have men to distribute its bills and another will mail them and pay postage, the conditions in different localities vary so that you could not adopt any rules for the number of people required in any gas office. I could not say as to the relative cost of mailing the bills and distributing them by hand. I bunch all the companies together when I make a report at the end of the month. I draw up the classification covering certain materials and certain items of labor and so on. The

companies send in their reports of the totals that shows the total amount of goods manufactured, total sold and total receipts and expense, and the report shows the results of the operation of the various parts of the works, and of the distribution in detail. The books are kept so as to show the exact amount of fuel used in the manufacture of coal gas, except amount of labor employed, so that we are able to tell from the books the exact cost of each thousand feet of gas. We don't manufacture coal gas at Waukegan, but at Warsau,
152 Little Rock and Waterloo. The books showing the cost at each one of the plants are kept separately. The Waterloo plant is the Citizens Gas and Electric Company. The president, secretary and the manager all draw salaries, but I cannot tell the amount of the salaries paid. We have a separate corporation at Waukegan and set of officers, but the officers of the company are not paid. I cannot tell the amount of its capital stock. I presume the books are kept to show that; I presume it earns dividends though I do not know about that. Each one of these plants report to me each month and I know what is manufactured and what it costs, what amounts are expended in generating and distributing the gas, and the amount of construction work done. I am required to know that each plant is keeping up its standard of efficiency, but the matter of amount of earnings is out of my jurisdiction. As the manager and gas engineer who looks after the construction of the plants and the manufacture and distribution. I would know about the earnings if I were to see the reports and were to take a report and analyze it, but my duties are such that I give my mind to these figures of operating and preparing for new work on the plants and giving instructions to my men in that work; that is new work in the towns where these plants are located. I don't know of an instance where our company has gone into a town and procured a franchise and installed a new plant, except Chicago Heights. They are not in the promotion business.

Q. Your company is interested in keeping up the price of gas?

A. No, I should say not.

Q. Is it opposed to municipal ownership.

A. I should say that anybody with capital invested and
153 in manufacturing would like the protection of their investment, but I cannot answer for my company as to municipal ownership. I know of a paper called "Public Service." It is, I think, opposed to municipal ownership. I think the paper comes to our office, but I don't recall whether it is a weekly or a monthly paper. I don't read it. We have a gas organization, but it is not a trust. Its purpose is to own securities of various gas properties—that is our company. It buys and sells gas bonds on about six or eight plants, I think, and our company acquired the securities and stocks and operates the plants.

There are several gas associations, such as the New England Gas Engineers, Pacific Coast Association and American Gas Institute, of which I am a member. Membership requires that you must be actively engaged in gas business. I never met Mr. A. T. Averill or Glenn Averill at these gas meetings.

Q. How did you happen to come to Cedar Rapids?

A. I was asked to by Mr. Pratt sometime last week, not before. I had not met the Mr. Averills or had any acquaintance with them. I have never attended a meeting of the American Gas Institute.

Q. You have been a witness before?

A. I was on the stand once before in my life. Not in a case of rate regulation, not in the question of fixing rates or the inventory of the property nor the life of a plant, nor anything of the kind and have never been a witness in a case of this kind.

I prepared this schedule, Exhibit 9, at Mr. Pratt's suggestion; I saw the books of the concern I am with and made up this
154 statement. I took no one set of books, nor any one plant, but made it up on a general average of the thirteen plants. I cannot tell you any specific item on this sheet without referring to it. I was asked to prepare a schedule showing the probable cost of manufacturing and distributing gas in Cedar Rapids. I have never been here before. I know nothing about the conditions, except having looked around the town and by being at the works and looking over the apparatus. I made no special visit here for that purpose. I saw Mr. Pratt's inventory after I arrived here. I had figures and statistics taken from our books upon which to base my statement; these statements are from the books of the several concerns with which I am connected. The schedule, Exhibit 9, was prepared in Cedar Rapids. In preparing the schedule I had before me the composit- figures made up from the books of the several companies, and those composit- figures were taken by me and my assistant from the various reports and from the books and records. The figures I had there that entered into the account showed the different items that had gone into the cost of producing gas taken from the books of these thirteen companies. The figures I brought here are the composit- figures of the thirteen companies I look after.

I have no regular periods of making trips to Austin, Texas; that is entirely dependent upon local conditions. When work is needed or they desire to extend their mains, or construction work, then I am called on to examine the plant and plan it as a gas engineer. In some cases where the work is a job of some consequence and requires a good deal of time; I will stay there some time and in other cases I will carry it on by correspondence, and only visit it when the work is done to inspect it.

In taking care of the accounts I do not charge to con-
155 struction account any of the repairs. I keep a classification of accounts so it shows what is repairs and what is construction. Where machinery gives out and is replaced with new that is repairs, if the same size and same machinery is put in its place. If any part of the pipe or mains give out and are replaced with mains of same kind and size, that is properly charged to repairs, and construction is independent new work, or it may be altering or fixing a part of the old system; if you change the size of the pipe you would call a portion of it new work.

I did not consult these statements, said nothing to them, the

officers, about it. I think my statement here covers all the plants that I have anything to do with. I am a stockholder in the holding company that has charge of the principal plants which I have named. When I gave the name of the company as located at Chicago I meant the holding company. The companies that actually operate the plants are located in these several places. They are entirely separate and independent so far as organization, but controlled by the Chicago company. I have to work with these reports from these companies all the time. I did not think any one report would have any bearing on this particular case, but I brought the composit- report or figure. I decline to produce the reports of the several companies. I have no authority to produce any such reports because they are the property of the several companies, and I have not had permission to use them. I did not use any one company's figures, but used all of them to determine the approximate average cost at a number of plants. Mr. Pratt did not ask me to take the private property of any one of these companies and expose their business, he and I both knew I had no right to do that; nobody suggested the method I should use. Mr. Pratt
156 wanted me to testify as to the cost of gas, as to the method of determining it. We did not discuss that, and did not discuss the getting up of these composit- figures.

I went into the gas office about eleven years ago to learn the business. I am not a graduate of any university. The two years I was in Beloit I was managing the electric light plant and had nothing to do with gas. It was in 1901 that I went back to Milwaukee. Mr. Cowdery was still there, and I went back at his request.

I would not define a trust as a company that gets together a large number of companies. The plants of ours are all operated entirely independent of each other.

Under some circumstances the life of cast iron pipe is practically unlimited and under other conditions it is not. I don't know of any statistics of the life of cast iron pipe than what I have given. The gas itself has no effect upon the cast iron pipe that I know of, so far as the conduction of the gas itself is concerned; I believe there is nothing in the gas itself to in any manner injure the pipe. It is the destructive agencies in the ground that causes the decay of the pipe. In estimating the life of mains I figure on the basis of fifty years. I could not say that if a cast iron pipe was put down here it would be entirely destroyed in fifty years. If there was a break or defect in a pipe due to anything but natural wear and it was replaced, that expense would be charged to repairs; if the same pipe was relaid in the same manner and would go into operating expense. The physical life of the pipe might be unlimited, if there were no destructive agencies to attack it, and still it might be discarded because of being inadequate and might be thrown away by reason of its being too small in size. There are a great many instances where pipe must be taken up and disposed of to
157 junk dealers by reason of its inadequate size and the business demanding larger pipe. The district builds up beyond what the pipe will serve, and the pipe must be taken up and thrown

away and other pipe laid to replace it. Gas is used in towns the size of Cedar Rapids to some extent for manufacturing purposes, but seldom for heating houses.

Cast iron pipe after it has been in the ground shows decay and would not be good enough to lay back in the ground because of the chances of leakage and so on. I have never heard of cast iron pipe dying in fifty years. You can't tell how long it will last. Wrought iron pipe, commercially speaking, deteriorates rapidly; I can't say just how long it will last. I know from looking at the inventory that a large portion of the Cedar Rapids pipe is wrought iron and I know from my own observation that wrought iron pipe at times deteriorates very rapidly, and while this gas company has a small charge each year to take care of its repairs, yet there are times in different seasons when they have to take care of a large amount, and it breaks out in different places and in large amounts.

Q. What company do you know of that had to meet such a contingency?

A. Mobile, in 1906. I cannot say how long the pipe had been in the grounds; I had charge of the construction work. The change there was partially on account of size and partially on account of the pipe being destroyed. That is a sea coast town and the soil varies in different parts of the town; I could not say that it was low ground where the pipes were destroyed. I am not chemist enough to say that salt contributed to the destruction of that pipe. I took the pipe up, observed it and put new pipe down. I replaced
158 the services with wrought iron. Small sized pipe, such as service pipe, is only made in one material. The pipes at Mobile might have been affected by salt if they did not run under the water level, but if they did run under the water level I would not think that they would be affected to any marked degree. The water in the bay at Mobile is not salty; the ocean is thirty miles from the bay. I think the works had been built 50 or 60 years, but cannot tell how long the pipes had been in the ground. I did not take up all the pipe, but portions of it only. It became necessary to change this plant on account of leakage and on account of the way the connections were made and on account of the pipe being eaten up. Other instances where we have had to change and replace wrought iron pipe have occurred in all of the plants I am connected with more or less, and is generally applicable to all plants. Where the renewals have been made because the pipe became unfit on account of wear, or connections or decay of the connections, the expense has been charged to repair account and is taken care of each year before the question of interest and dividends are considered as a part of the operating expenses.

The annual sales in the plants I represent are as follows:

Waukegan	
Chicago Heights	30 to 40 millions
Wausaw	18 to 20 millions
Little Rock	80 millions
Waterloo	70 millions
Ft. Madison	16 millions

Texarkana ..... 15 millions
Jacksonvile ..... 70 millions
Mobile ..... 15 millions
Beaumont ..... 15 millions
159 Austin ..... 30 millions or more
Benton Harbor and St. Joseph ..... 60 millions

In arriving at the composite figures for these thirteen companies, we assembled the figures, we took the total number of pounds of coal and divided by the number of cubic feet of gas made, and we followed this method clear through. I would have my reports from those plants, for instance, to show the total number of pounds of coal used by the various plants and of each separately, that would be added and divided by the number of feet of gas made to arrive at the composite yield per lbs. of coal and the whole schedule was prepared in that manner. So with reference to the water gas, to make the matter clearer.

Those figures and reports from the various works, after being assembled showed the amount charged into the various accounts and the total result divided by the amount of gas made would give me the composite figure. I took the data from the original reports; I could not say whether the original reports were correct or not, but if the reports had been at variance with the usual standard to any marked degree the matter would have been taken up with the local manager. I took the reports for the year 1905 of all the gas companies, except in one or two cases where the figures were not complete for 1906, and a 12-month period was taken ending in 1907. Two of these thirteen plants were straight coal gas plants and one is a mixed gas plant, while the others are water gas. The cost of distributing gas per M. with small companies is somewhat increased over large plants, also the labor in the manufacturing would be more, but I think that it is a fair comparison to compare Cedar Rapids with these thirteen plants, but the plants average
160 up with Cedar Rapids and are similarly situated so far as freight rates and materials are concerned.

The various changes in the conditions at the several plants, in my opinion would make a composite average such as I have used of more value than selecting one or two plants the size of the plant and the output would cut some figure in the cost of distribution.

I am a stockholder in some of these companies and an officer in two of them.

With reference to depreciation I believe I have covered the matter of the mains. I have figured depreciation on the mains of 2 per cent., which is what my judgment would warrant and have assumed in my calculation that the mains were cast iron; if they are partly wrought iron the depreciation would be higher. I have not discriminated between the two in my estimate for I had no means of knowing the amount of cast and wrought iron pipe. I did not examine the inventory to see, but figured on the basis of all being cast iron.

I figured the depreciation on the brick buildings at 2 per cent.,

and is based on a new building, in fact, from the observation of my inventory it appears to me that the entire inventory was placed on a depreciated valuation of the property, and this estimate of 2 per cent. is aside from any repairs. I could not tell you the life of a brick building, assuming repairs were made. There are a great many factors entering into the life of a building; there might be an explosion at the works and the building would last but one year, and again they might last fifty, or they may be out grown and become inadequate—such things as explosions and inadequacy are not purely imaginary—they are based on my
161 knowledge of the conditions on that account because such things do occur, and it is not an imaginary hazard. In fixing insurance rates they have a basis for it.

By figuring 2 per cent. on the valuation of the brick buildings it would amount to $459.59 a year. I cannot say whether in the bookkeeping of our companies we provided for this depreciation or not.

The depreciation on the frame buildings I have figured at 5 per cent. a year. I know that around gas works frame buildings are being erected and torn down and are replaced and moved from one part of the plant to another almost all the time and my figure is based partly on their inadequacy and partly upon the life of the building. I don't know absolutely how long a frame building will last. On the holders and wells I have figured a depreciation of 3 per cent., which is based upon my knowledge of gas plants and what I have seen about different gas works and knowing that holders outgrow their usefulness and depreciate to an extent so that in time they are put out of service. I cannot say what the life of an ordinary holder is: I don't think anyone knows; but I do know of several places where holders have been abandoned because worn out; there may have been local conditions that may have affected the holder. I don't know of any general rule by which to determine the depreciation of holders based on figures and statistics; all these figures are based on my own judgment and opinion. They are not based upon anything outside of my own observation. It is my opinion that all of this fund should be set aside and that the consumers of gas in addition to the cost of its manufacture and distribution should pay this amount into the treasury to meet any contingencies
162 that might arise. Any sum set aside must cover all contingencies that may arise in the conduct of the gas business, whether it is for replacing buildings blown down, worn out or outgrown, or whether it is for services or meters or what not, the same as any other physical property must finally go to pieces. The company will be called upon to make a great many repairs in one place and another that the small yearly charge for repairs might not cover. The small repairs are taken care of from year to year, but those small items don't cover any large items. If the mains were outgrown they would have to take them up, if they were not fit to be relaid; it doesn't include anything of that character.

On the benches I figure a depreciation of 15 per cent. The benches are practically as good as new. The benches are given the

worst kind of care usually, for it is an impossibility in operating a gas plant to employ at all times laborers who are skilled and who will take care of your property, and a bench is liable to be exploded by careless workmen, or the furnace be jarred to pieces, and this is one of the big items of expense of the company. A bench must be refilled about every two years, but this refilling of the bench (putting in new retorts) is charged to yearly repairs and taken care of in that manner while the bench itself is renewed from the reserve fund.

I think when you view the hazards of the business and the contingencies that must be provided for, that my figures are a very fair estimate.

Geo. F. Kellogg.

The plaintiff then produced GEO. F. KELLOGG, who being first sworn, on direct examination testified as follows:

I reside in Chicago, and have resided there for twelve years, and my occupation is that of public accountant, as assistant
163 manager of the "Audit Company of Illinois, a corporation of which C. W. Neisley is president. The company makes a business of examining into the books and accounts of business and corporations operating public utilities. I have been with the company for five years; prior to that time I did some of that kind of work on my own account. We do a great deal of that kind of business and I have personally examined from twenty to twenty-five gas companies' accounts in the last two years.

I was employed to make an examination of the books and accounts of the Cedar Rapids Gas Light Company's affairs and started on the work November 1, 1907, and made the examination personally, being engaged fourteen days in the examination. Mr. Glenn Averill was there to assist me and to show me what the books contained, he being familiar with them.

I examined the records of the gas manufactured, gas metered, and some of the other statistics contained in that book; I examined the cash book, journal and ledgers and all the records of the company and I verified the accounts found in the books and found them mathematically correct. The books are kept in rather a condensed form; they do not keep them according to the standard classification of gas accounts and I was compelled to analyze a great many of the accounts in order to make what I desired as a classification. These accounts are about as the books have been kept; except the consumers' ledger which I could not go into very deeply on account of their not being the same as they were in 1905 and 1906, the closed account being taken out of their files and new accounts put in; that is, a matter is set and the account is opened on the consumer's ledger, and when the party moves out of the house or goes out of the city they take that account out of the books.
164 The consumers' ledgers are a set of loose leaf ledgers and as new accounts are set in there, they are placed in the order of their index so that the consumers' ledger shows only live accounts,

and the dead accounts are removed from the ledger by removing the loose leaf upon which they are entered. I examined the accounts back as far as and including January, 1905.

In my analysis of a number of the accounts I made a distribution of them; I did this to conform to the average report in the operation of gas companies, and the accounts that I had to analyze in that way are such accounts as for instance, one called Fitting Account,—that account contains purchases of mantels and lamps, labor, both gratuitous and labor which they have billed, and credits for labor that has been charged to other accounts, other labor accounts and also contains some distribution labor,—that is, meter readers and trouble work, which is gratuitous and in order to arrive at the proper analysis of the accounts of the company and the cost of production and distribution of gas it was necessary to analyze this fitting account in the manner in which I have stated. I found that gratuitous work in the account, referred to setting of the gas stoves, complaints of improper working of gas stoves, improper lighting and work of that kind or in other words such work, materials and service as the company supplied its patrons and made no charge for.

I also analyzed practically all of the labor accounts and all accounts as they are carried in the books as Gas works Accounts and Cupola Expenses. I had to take those accounts and analyze them and see whether there was anything entered that did not properly belong there or anything missing that should be there.

I had access to the office, files, books and records and everything pertaining to these accounts of the gas company, and every-
165 thing about the office. In analyzing the labor account I simply separated the labor account from the distribution and general expenses and I made a distribution of labor for the purpose of showing the cost separately of making coal and water gas. The coal gas account is what we call property account and I found some portions of the property account was carrying what should properly have been charged to Renewals and Repairs. I took the labor that belonged to cupola account and carried it to the cost of water gas.

In the expense account I made a separation or distribution of the office salaries, officers' salaries, taxes, insurance, rents and lightings and accounts of that kind.

I have taken the accounts of the Gas company as shown by its books and records, and taking all the information gained therefrom have made up an audit and report of the books and accounts of the company for the years 1905 and 1906, which shows among other things the cost of the manufacture and distribution of gas for those years. The audit and report which I have made has been marked Exhibit No. 25, by the reporter.

166 Witness produces paper marked Exhibit No. 25, which is as follows:

EXHIBIT No. 25.

Report of the Audit Company of Illinois on the Books and Accounts of the Cedar Rapids Gas Light Company, Cedar Rapids, Iowa, Years 1905 *and* 1906.

NOVEMBER 13, 1907.

Cedar Rapids Gas Light Company, Cedar Rapids, Iowa.

GENTLEMEN: Agreeably with your instructions, we went to Cedar Rapids and have made an examination of the books and accounts of the company for a period of two years ended December 31, 1906, and beg to present herewith statements reflecting the operations for the period under examination as shown by the books:

Exhibit "A." Balance sheet at January 1, 1905.

Exhibit "B." Balance sheet at January 1, 1906.

Exhibit "C." Balance sheet at January 1, 1907.

167 Exhibit "D." Statement of earnings and expenses for year ended December 31, 1905.

Exhibit "E." Statement of earnings and expenses for year ended December 31, 1906.

Exhibit "F." Statement of cash receipts and disbursements for year ended December 31, 1905.

Exhibit "G." Statement of cash receipts and disbursements for year ended December 31, 1906.

Exhibit "H." Analysis of additions for year ended December 31, 1905.

Exhibit "I" Analysis of additions for year ended December 31, 1906.

Your system of accounts necessitated analyzing practically every item of income and expenditure in order that operations for the specific periods might be presented in a comprehensive form, and under a somewhat uniform classification.

Owing to your practice of closing your cash accounts on the 20th of each month, the statements of Cash Receipts and Disbursements (Exhibits "F" and "G") by months, reflect the transactions for the month ended on the 20th. This does not however affect the total transactions for the year.

We find that all "Additions to Property" are carried in one general "Gas Works" account, but with the aid of such information as the book entries disclose, together with letters, bills, drafts and contracts, we are enabled to present an analysis of this account

168 under Exhibits "H" and "I."

We find a memorandum in the 1905 accounts of a transfer from Additions (Gas Works) Account to Repairs and Renewals. It is apparent that it was your intention to credit Additions and charge Repairs and Renewals $5,627.00, by reason of the changes incident to tearing out the old and constructing the new purifying room. Inasmuch, however, as we find no entry in the books making this adjustment we leave the amount in Gas Works Account.

In view of the limited time given us for an examination of this

kind, it is impossible for us to certify except that the foregoing statements reflect the operations for the two years ended December 31, 1906, as shown by the books which we find to be mathematically correct.

The analysis of accounts would indicate that an insufficient amount has been expended upon repairs and renewals to keep the plant up to a proper working efficiency. If repairs and renewals were brought up to four per cent. of the physical property, in our opinion, the whole cost of gas, exclusive of a fair profit, would be approximated. To this cost, before legislature, local or otherwise, can assume to dictate a selling price of gas, there should be added ten per cent. upon the actual existing invested capital at a proper appraisal, which in this instance would go far beyond the price per thousand at which the city is asking you to sell gas.

Respectfully submitted,

C. W. KNISELY, C. P. A.,
President.

169 EXHIBIT "A" OF EXHIBIT 25.

Cedar Rapids Gas Light Company.

Balance Sheet January 1, 1905.

Assets.

Real Estate and Plant		$372,014.34
Inventories:		
Fittings	$3,163.00	
Coke	3,950.00	
Tar	420.00	
Oil	314.49	
	$7,896.49	
Less credit balance coal account	1,079.43	
Net amount of inventories		6,817.06
Accounts Receivable:		
Consumers' Ledger		8,566.80
Cash:		
Cash in bank	460.52	
Cash in office	150.11	
		610.63
		$388,008.92

Liabilities.

Capital stock		$150,000.00
Bonds (20 year 5 per cent)		75,000.00
Bills payable		10,500.00
Accounts payable:		
A. T. Averill	$1,752.40	
G. M. Averill	166.60	
Parker Russell Mfg. Co.	500.00	
Labor (pay roll)	533.25	
		$2,952.25
Surplus		$149,556.67
		$388,008.92

170 EXHIBIT "B" OF EXHIBIT 25.

Cedar Rapids Gas Light Company.

Balance Sheet January 1, 1906.

Assets.

Real Estate and Plant	$372,014.34		
Additions to property	14,579.18		
Total real estate and plant		$386,593.52	
Less charged off for depreciation		10,000.00	
			$376,593.52
Inventories:			
Fittings	$2,423.13		
Coke	5,920.00		
Tar	166.75		
		8,509.88	
Less: Coal Account Credit Balance	1,941.42		
Less: Oil Account Credit Balance	270.51		
		2,211.93	
Net inventories			6,297.95
Accounts Receivable:			
Consumers' Ledgers	9,827.00		
J. R. Meader	47.74		
		9,874.74	
			9,874.74
Cash:			
Cash in office		334.69	
Less: Overdraft Cedar Rapids Nat'l Bank		13.89	
			320.80
Accounts Paid in Advance:			
Contract for new purifying plant			8,235.97
			$401,322.98

Liabilities.

Capital Stock			$150,000.00
Bonds (20 year 5 per cent)			75,000.00
Bills Payable			3,000.00
Accounts Payable:			
A. T. Averill		$9,003.62	
G. M. Averill		175.00	
Labor (pay roll)		1,050.20	
			10,328.82
Surplus (1905)	$149,556.67		
Add: Surplus earning 1905	25,437.49		
		$174,994.16	
Dividends paid 1905		12,000.00	
Net surplus January 1, 1906			$162,994.16
			$401,322.98

171 EXHIBIT "C" OF EXHIBIT 25.

Cedar Rapids Gas Light Company.

Balance Sheet January 1, 1907.

Assets.

Real Estate and Plant	$376,593.52		
Additions to Property (1906)	30,866.53		
		$407,460.05	
Less: Depreciation 1906		13,000.00	
			$394,460.05
Marion Plant Account			25,974.60
Inventories:			
Fittings	1,652.36		
Coke	2,406.00		
Tar	[illegible]		
		$4,412.16	
Less: Coal Credit Balance	3,845.46		
Less: Oil Credit Balance	972.44		
		4,817.90	
			Minus 405.74
Accounts Receivable:			
Consumers' Ledgers		5,590.00	
A. T. Averill		1,910.00	
J. R. Meader		924.84	
			8,424.84
Cash:			
Cash in Cedar Rapids National Bank		143.50	
Cash in office		257.17	
			400.67
			$428,854.42

Liabilities.

Capital Stock			$150,000.00
Bonds (20 year 5% gold)			75,000.00
Bills Payable			31,000.00
Accounts Payable:			
Parker Russell Mfg. Co.	$1,202.76		
Economy Furnace Co.	575.00		
G. M. Averill	200.00		
Andrew Kydd	80.00		
		$2,117.76	
Labor (pay roll)		1,131.86	
			$3,249.62
Surplus, January 1, 1906	162,994.16		
Add: Surplus earnings 1906	18,610.64		
		181,604.80	
Deduct: Dividends paid 1906		12,000.00	
Net surplus, Jan. 1, 1907			169,604.80
			$428,854.42

EXHIBIT "D" OF EXHIBIT 25.

CEDAR RAPIDS GAS LIGHT COMPANY.

STATEMENT OF EARNINGS AND EXPENSES FOR YEAR 1905.

					Percentage per M of gas metered.
SALES:					
Gas manufactured 86,723,100 cubic feet					
Leakage - - - 8,940,800 cubic feet					
Metered - - - 77 782,300 cubic feet				$87,850.68	1.129
EXPENSES:					
Manufacturing Expense:					
Superintendence		1,485.00			
Gas used at works		1,088.00			
Water Gas:					
Oil	1,105.00				
Coke	525.00				
Labor	197.58				
Supplies	1.35				
Cost of water gas		1,828.93			
Coal Gas:					
Coal carbonized	35,497.00				
Labor	7,119.27				
Supplies and miscellaneous expense	56.40				
Purification labor	869.55				
Purification supplies	585.12				
	44,127.34				
Less Residuals:					
Coke 16,577.93					
Tar 1,285.57					
	17,863.50				
Cost of coal gas		26,263.84			
Total cost of manufacturing mixed gas			30,665.77		.394
Distribution Expense:					
Distribution labor, meter readings, sets and removals, arc lamp maintenance and gratuitous work	3,759.63				
Distribution supplies	530.90				
Gratuitous labor and material on new business	2,487.25				
Total distribution expense			6,777.78		.087
Repairs and Renewals:					
Repairs and renewals to mains, services and meters		1,496.08			
Repairs to buildings and machinery		724.72			
Total repairs and renewals			2,220.80		.029
General Expenses:					
Salaries of officers	2,375.00				
Salaries of accounting department	2,800.21				
General office sundries and miscellaneous expense	612.83				
Office rents and lights	841.64				
Stationery, printing and postage	168.53				
Insurance	30.50				
Taxes	2,202.00				
Legal expenses	80.00				
Total general expenses			9,110.71		.117
Depreciation charged off			10,000.00		.129
Total expenses including taxes				58,775.06	.756
Income from operations				29,075.62	
Additions to Income:					
Rents from real estate				292.91	
Total income				29,368.53	
Deductions from Income:					
Interest on floating indebtedness			142.29		
Bond interest			3,788.75		
Total interest charges				3,931.04	
Net income				$25,437.49	

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EXHIBIT "E" OF EXHIBIT 25.

CEDAR RAPIDS GAS LIGHT COMPANY.

STATEMENT OF EARNINGS AND EXPENSES FOR YEAR 1906.

					Percentage per M of gas metered.
SALES:					
Gas manufactured 100,764,000 cubic feet					
Leakage - - - 8,457,000 cubic feet					
Gas metered - - 92,306,100 cubic feet				96,593.78	1.046
EXPENSES:					
Manufacturing Expense:					
Superintendence		2,200.00			
Gas used at works		1,115.39			
Water Gas:					
Oil	6,191.00				
Coke	2,703.00				
Labor	647.36				
		9,541.36			
Coal Gas:					
Coal	34,850.00				
Labor	7,001.57				
Supplies and miscellaneous expense	570.97				
Purification labor	480.20				
	42,902.74				
Less Residuals:					
Coke	16,399.23				
Tar	988.35				
	17,387.58	25,515.16			
Total cost manufacturing mixed gas			38,371.91		.415
Distribution Expense:					
Distribution labor	3,870.00				
Distribution supplies and miscellaneous expense	612.58				
Gratuitous labor and material on new business	1,501.50				
Total distribution expense			5,984.08		.065
Repairs and Renewals:					
Repairs and renewals to mains, services and meters:					
Labor	1,422.84				
Material	1,460.74				
Repairs to buildings and machinery	3,481.63				
Total repairs and renewals			6,365.21		.069
General Expenses:					
Salaries of officers	3,000.00				
Salaries of accounting department	2,669.69				
General office sundries and miscellaneous expense	1,024.82				
Office rent and lights	967.45				
Stationery, printing and postage	233.94				
Advertising	37.00				
Legal expenses	10.00				
Taxes	2,150.36				
Total general expenses			10,093.26		.109
Depreciation charged off			13,000.00		.141
Total expenses including taxes				73,814.46	.799
Income from operations				22,779.32	
Additions to Income:					
Rents from real estate				529.99	
Total income				23,309.31	
Deductions from Income:					
Interest on floating indebtedness			948.67		
Bond interest			3,750.00		
Total interest charges				4,698.67	
Net income				$18,610.64	

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EXHIBIT "F" OF EXHIBIT 25.

CEDAR RAPIDS GAS LIGHT COMPANY.
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS.
FOR YEAR OF 1905.

RECEIPTS.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Total.
Cash on hand Jan. 1, 1905....													$610.63	$ 610.63
Gas accounts	$ 8,225.39	$ 7,223.52	$ 6,083.57	$ 6,342.81	$ 60.77	$ 5,968.21	$ 5,908.79	$ 5,357.89	$ 5,997.26	$ 6,483.37	$ 7,594.31	$ 7,555.11		78,501.00
Coke	1,030.96	2,340.10	1,327.97	1,126.59	14	513.71	478.59	452.27	970.90	1,921.58	2,571.63	2,965.18		16,232.92
Tar		49.40		455.50	.0	271.00	162.59	29.20	45.00	210.62	151.08	245.75		1,637.64
Real estate rentals.....	47.00	68.75	39.50	39.50	.5				12.50	12.00	62.25	197.03		492.28
Fittings	299.81	438.31	297.94	437.38	5. .58	587.05	506.44	694.68	378.65	557.82	663.02	838.31		6,209.99
Stove Company				35.50	3,726.00	3,193.11	2,872.00	5,882.00	1,283.00	1,736.50	781.50	289.00		19,798.61
Personal accounts	5.00		17.13			700.00	3,800.00		1,800.00			2,700.00		9,022.13
Bills payable				2,000.00										2,000.00
Purifying room account.....			18.49		2.94									21.43
Retort house account								12.00						12.00
Property account				11.40										11.40
Expense					10.00									10.00
	$ 9,608.16	$10,120.08	$ 7,784.60	$10,448.68	$10,574.98	$11,233.08	$13,728.41	$12,428.04	$10,487.31	$10,921.89	$11,823.79	$14,790.38	$610.63	$134,560.03
DISBURSEMENTS.														
Wages and salaries.....	1,023.51	1,689.33	1,565.25	1,634.81	2,123.61	2,129.82	2,237.44	2,567.66	2,301.60	2,924.45	2,984.33	2,600.17		25,781.98
Coal	2,707.29	3,219.21	1,771.53	2,215.20	2,881.10	2,512.76	2,677.85	2,292.59	3,192.06	2,823.03	2,329.77	5,246.80		33,869.19
Oil											278.86	241.14		520.00
Contracts	415.30	6.90						77.80						500.00
Misc. expense accounts.....	65.00	95.13	68.00	99.00	95.25	141.90	95.75	103.50		142.50	149.38	552.10		1,607.51
Sundry repairs accounts.....	8.06	31.48	1.93		65.84	7.70	38.24	6.02	101.53	316.46	106.65	25.32		709.23
Fittings	313.05	202.46	292.84	314.87	921.49		692.25	559.31	757.93	667.45	853.84	431.58		6,007.07
Retort house sundries.....			.76	.61	132.02	229.70	21.61	20.95	5.69	33.39	36.24	69.81		550.78
Gas works accounts.....	4.75		3.31		2,577.87	988.49	2,370.86	582.63	708.94	1,621.14	2,161.45	957.38		11,976.82
Purifying sundries	2.00	3.92	164.19	2.00	3.92			422.53						598.56
Tar and coke supplies.....	9.80				13.65		13.50	19.67		12.57	9.79	26.82		105.80
New purifying room.....					430.66	2,678.28	2,612.33	997.36	769.99	7.71		527.50		8,023.83
Eclipse Stove Company.....					203.20	1,193.21	2,463.15	1,273.78	5,897.57	207.14	380.00	1,305.50		12,923.55
Insurance											40.50			40.50
Repairs, etc., real estate.....		1.50			4.42		7.37		71.00		46.91	51.67		182.87
Interest			75.00	1,942.29	13.75					1,916.50				3,947.54
Taxes				1,640.43						561.57				2,202.00
Damages								50.00						50.00
Personal accounts	1,752.40	341.60			4.50	900.00	143.50							3,142.00
Bills payable	1,500.00	3,000.00	3,000.00	2,000.00										9,500.00
Dividends	1,500.00	1,500.00	150.00	1,500.00	1,350.00						3,000.00	3,000.00		12,000.00
Balance on hand Dec. 31..													320.80	320.80
	$ 9,301.16	$10,091.53	$ 7,092.81	$11,349.21	$10,821.28	$10,781.86	$13,373.85	$ 8,973.80	$13,806.31	$11,233.91	$12,377.72	$15,035.79	$320.80	$134,560.03

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EXHIBIT "G" OF EXHIBIT 25.

CEDAR RAPIDS GAS LIGHT COMPANY.

STATEMENT OF CASH RECEIPTS & DISBURSEMENTS.

FOR YEAR OF 1906.

RECEIPTS.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		Total.
Cash on hand Jan. 1, 1906....													$320.80	$ 320.80
Gas accounts	$ 8,262.50	$ 7,935.16	$ 7,179.49	$ 7,437.18	$ 6,784.32	$ 7,259.87	$ 7,171.21	$ 6,804.58	$ 7,383.16	$ 8,329.91	$ 9,453.34	$10,406.69		94,407.44
Coke	2,710.37	3,550.59	2,576.20	1,559.67	543.93	521.63	451.05	477.23	1,582.69	1,149.23	1,487.45	2,357.50		18,367.54
Tar		.50	10.50	19.40	22.00	481.00	91.10	19.50	11.60	14.50	46.90	210.50		927.50
Real estate rentals	53.50	52.25	28.00	49.75	50.25	44.75	41.25	67.50	61.50	59.00	64.50	56.75		629.00
Fittings	364.60	475.61	326.45	518.93	520.80	840.61	456.26	419.79	489.10	476.54	631.81	943.59		6,464.09
Stove Company	10.00	15.00	23.50	4.00				2,000.24	485.00	1,568.00	687.00	930.00		5,722.74
Personal accounts				4,300.00		3,588.20		1,925.00		600.00	500.00	90.00		11,003.20
Bills payable	3,000.00	5,000.00		3,000.00	5,000.00	13,000.00				5,000.00				34,000.00
Marion accounts								94.50	92.38	1,300.00		300.00		1,786.88
	$14,401.00	$17,029.11	$10,144.14	$16,888.93	$12,921.30	$25,736.06	$ 8,210.87	$11,808.34	$10,105.43	$18,497.18	$12,871.00	$15,295.03	$320.80	$174,229.19
DISBURSEMENTS.														
Wages and salaries.....	1,773.50	2,148.55	1,697.07	2,119.61	1,816.15	1,614.44	1,771.89	1,909.13	2,175.80	2,246.11	1,843.07	2,081.76		23,197.08
Coal	1,102.71	4,900.57	5,949.75	657.16	2,470.41	3,698.94	746.79	2,959.80	274.37	1,198.75	3,579.60	4,752.87		32,291.72
Oil	561.94	304.52	271.38		274.12	847.56	191.79	550.65	472.36	935.72	277.59	555.97		5,243.60
Miscellaneous expense accounts	81.00	101.90	71.00	122.50	64.90	184.50	91.61	125.50	247.45	170.69	127.16	789.80		2,178.01
Sundry repairs accounts	11.14	75.12	101.48	443.71	92.44	488.74	66.27	97.91	71.93	110.83	236.66	66.43		1,862.66
Fittings	193.42	78.36	273.52	486.58	486.41	504.22	342.41	788.17	743.74	1,193.98	809.65	902.18		6,802.65
Retort house sundries.....	40.85	152.25	299.94	109.64	46.33	22.90		185.51	16.95	153.55	177.38	709.37		1,914.67
Gas works accounts.....	1,126.75	420.88	914.45	2,625.00	1,519.19	3,705.97	2,730.19	771.60	1,399.68	2,089.67	758.81	558.68		18,620.87
Tar and coke supplies.....	9.00	8.30				8.85	99.60	11.20	39.06	21.20	11.06	92.51		300.78
New purifying room.....	500.00	652.46	38.59											1,191.05
Eclipse Stove Company.....	5.00								175.00	793.47	330.87	175.00		1,479.34
Repairs, etc., real estate.....	8.80	1.95	6.94	1.85	9.75	1.50	14.65	13.78			.45	39.34		99.01
Interest		168.50		1,875.00			90.00	75.00	100.00	1,957.50	194.17	238.50		4,698.67
Taxes				1,622.95					527.41					2,150.36
Personal accounts	8,300.00				1,800.00	7,881.82		900.00	300.00		2,104.12	3,545.88		24,831.82
Bills payable		3,000.00								3,000.00				6,000.00
Accounts payable									100.00	500.00				600.00
Dividends		5,400.00	600.00					2,000.00	1,700.00	1,900.00		400.00		12,000.00
Marion				6,402.11	6,312.51	3,807.08	3,323.28	1,495.70	1,729.49	2,289.45	2,226.52	780.09		28,366.23
Cash on hand Dec. 31.....													400.67	400.67
	$13,714.11	$17,413.36	$10,224.13	$16,466.11	$14,892.21	$22,766.52	$ 9,468.48	$11,883.95	$10,073.24	$18,560.92	$12,677.11	$15,688.38	$400.67	$174,229.19

180 EXHIBIT "H" OF EXHIBIT 25.

Cedar Rapids Gas Light Company.

Analysis of Additions, 1905.

Pipe and supplies for mains and services	$7,339.77
Labor, mains and services	1,561.24
Labor at works	942.42
Freight	70.01
Meters and meter supplies	2,376.15
Valves, cocks, inspirators and supplies	275.95
Miscellaneous material and supplies	170.13
Arc lamps	92.32
Paving brick	310.00
New boiler and stack (on account)	1,000.00
Scales	132.79
Brick and cement work	248.85
Blue prints	30.00
Lumber	41.95
	$14,590.58
Less material sold	11.40
Total additions for 1905	$14,579.18

EXHIBIT "I" OF EXHIBIT 25.

Cedar Rapids Gas Light Company.

Analysis of Additions, 1906.

Pipes and supplies for mains and services	$4,963.45
Labor on mains and services	2,349.03
Labor at works	562.43
Freight	129.55
Valves and supplies	453.30
181 Meters, governors and meter supplies	3,648.00
Lead, miscellaneous material and supplies	132.26
Arc lamps	228.88
Brick, lime and cement	174.26
Tank	323.40
Paid on boiler and stack contract	474.95
Paid on gas machinery contract	8,000.00
Constructing new purifying room	9,427.02
Total additions for 1906	$30,866.53

Q. Is there anything shown on Exhibit 25 being your audit, except what appears in the books of the company?

A. There are one or two minor items, which I will call attention to now. The 1905 gas sales account contains an item of $1088.00 for gas used at the works and also in general expense account there is included, gas metered against the office, in the item of $864.41. To explain at the works and at the office there are meters which register the amount of gas consumed at those places by the company, but there is no charge for it on the company's books for the company does not pay for it. In my audit I have placed a price of $1.00 per M. against this gas and have placed it in the income of the company and have also placed it in the cost of manufacturing gas. My audit shows the total gas sales including gas used at the works and office, is 77,782,300 feet. The books show the amount of gas used at the works and at the office, but there was no credit to sales or charge to expense for it; they simply kept a meter account of the gas used at the works and office. I found a memorandum in the 1905 accounts of a charge that should have been made against

182 property or gas works account, for repairs and renewals, which was never carried through the books or entered on the journal or ledger, a sort of open memorandum, so I did not carry it into my report as an item of renewals; the items was $5,627.00.

In the audit for 1906 there are like entries as in 1905, for gas used at the works and at the office. Gas used at the works in 1906, I have placed at $1,115.39, and the gas used at the office is found in the item of $967.45, and rents. I obtained the amount of gas used at these places from the meter record in the same way as for 1905, and placed a price of $1.00 per M. upon the same and added these items of expense for light at the office and works to the income of the company for gas sales. I consider it was necessary to charge these items of expense and add them to the total income of the company in order to arrive correctly at the cost of the gas metered, for it is a part of the manufacturing and general expense. I do not think I added any other matters to these found in the books except those mentioned.

In one column in Exhibit "D" of Exhibit 25, a column is marked "Percentage per M. of gas metered; these are percentages of expense to each thousand feet of gas as shown by the amount of gas metered. The report shows for the years 1905 and 1906 amount of gas manufactured, the leakage and gas metered. The leakage is the difference between gas manufactured and gas metered. In 1905 I have shown in the column opposite amount of gas metered the figures $87,850.68; that money represents gas sales for that year, and the figures opposite the gas sales, to-wit: $1.129, the price received for gas per M. c. f.

In Exhibit "D" I start with expense of manufacturing. The

183 books show the cost of superintendence to be $1,485.00; cost of water gas is oil, $1,105.00; coke, $525.00; labor, $197.58; supplies, $1.35; and the total cost of water gas $1,828.93. I did not, of course, find the cost of water gas entered on the books

in just that way, but this is my analysis according to the books. Take the oil account. I arrived at it from the amount of oil purchased and I went through the books to determine this. They did not have what is termed a water gas account in the books, so I went into the accounts showing general labor, coke and oil, and in them I found and picked out such items as had relation to the water gas and took them out and charged them to the water gas.

The books do not show exactly the coal used for coal gas, in pounds or in dollars, because the inventories are not carried through, but the books show amount of coal purchased during the year which was $35,493.00; I arrived at the labor account for the coal gas by the labor that was charged to coal gas; and the same is also true in regard to supplies, and miscellaneous expense found on exhibit "D" of Exhibit 25. The item of purification supplies was arrived at by an analysis of the accounts containing those supplies. I found the total cost for coal gas in the holder for that year, 1905, was $44,127.34.

For residuals I have taken the profits on coke and tar as shown by the books, that is, the amount of coke and tar sold by the company, less the cost; the labor involved in handling the coke produced on one side and coke sales on the other leaves a balance of $16,577.93, and in the tar sales account there is for that year $1,285.57. The books show the total coke sold and the receipts for it, and I also obtained from the books the cost of handling the coke and I deducted the cost of handling from the total sale and arrived at the figure I have given and did the same in regard
184 to the tar. By deducting the profits on these residuals, $17,863.50, from the total cost of coal gas, $44,127.34, leaves the cost of coal gas $26,263.84, which is the cost of coal gas in the holder.

I found the total net cost of mixed gas in the holder for the year 1905, to be $30,665.77, or .394c per M. cubic feet.

My audit also includes a statement of the cost of distribution. The first item involves labor of distribution, labor of meter setting, reading and removing. When I speak of distribution expenses I mean the expense of distributing gas to the consumers from the holders and by gratuitous work I mean work that is not charged for, but work that the books show it costs the company to do. The item of distribution supplies includes small supplies, nipples, feeds, small pipe, stuff going to make up repairs, setting gas stoves or heaters. There is an item of gratuitous labor and material on new business, that is on a large number of new gas stoves that were sold and set up, for which no charge was made for connections or services. This item of $2,487.25 represented the cost to the company of setting up these new stoves, for which there were no charges on the books of the company against consumers, but the several items of the expense were there showing what they consisted of. I made the total distribution expense for mixed gas for 1905, $6,777.78, or .087c per M. c. f.

I examined and audited the books and ascertained the cost and expenditures of the company for repairs and renewals for that year

and have distributed these expenses under renewals and repairs to mains and services and meters, $1,496.08, and manager's salary, $724.72, making a total of $2,220.80, or .029c.

185 I analyzed several books to get at the general expenses of the company—salaries of officers, salaries of accounting department, the office generally, miscellaneous expenses, like telegrams, telephones, incidental expense, office rent, legal expense, printing and insurance. The general expense was $9,110.71, or cost per M. c. f. .117c.

I found an item on the books of $10,000.00 charged off for depreciation for the year 1905, which amounts to .129c. per M. c. f. I figured out the net income from the operation and arrived at it by taking the total expense from earnings, which left $29,075.62. I also found from the books an item of $292.91 as rent from real estate, which was from rent of houses on what is termed the annex.

The company paid in 1905, interest on floating debt to the amount of $149.29, and interest on bonds of $3,788.75, which left a net income of $25,437.49, from this there should be deducted an item of $5,627.00, before explained, leaving an actual net income of $19,810.49.

Exhibit "E" of Exhibit 25, is in all respects a similar statement for the year 1906, to the one Exhibit "D" is for 1905, and is made up from an analysis of the accounts contained in the books.

The net income for the year 1906, as shown by the books was $18,610.64. I found that there was charged off on the books for depreciation for that year $13,000.00. There were 92,386,100 c. f. of gas metered that year and the price received for the gas metered was $1,046.00. I found the total cost of mixed gas in the holder that year was .415 per M. c. f., and the total cost for manufacture and distribution .799c.

186 In arriving at the figures making up Exhibit "F" of Exhibit 25, I took off every item in the cash book and distributed it—made a distribution according to the classification in "F." There is nothing in the Exhibit "F" that is not on the *b*ash book in some form or under some account. I found the cash book mathematically correct.

I verified the expense account by taking the cash book items and carrying them into the distribution of expenses, and I examined all the bills I could find for disbursements and where I could not find the bills I resorted to the drafts and purchases or checks given, wherever I found bills for disbursement I checked them up with the books; where I failed to find bills I sent to the bank. This Exhibit shows the receipts and disbursements by months. Wherever bills were available I went through them and the part on contract I took the cash book for which showed what was paid out.

In reference to personal accounts, I examined the deposits to see that the money was paid in, and they showed that it was paid or received. Exhibit "G" was made up by me from the books of the company in the same way as Exhibit "F." There is an account in the Exhibit designated "Personal Account," which was money advanced to the company, or temporary loans, and I found disbursements cor-

responding to the accounts. I examined the deposits in the cash books to see what these funds went into and found them to be all right. In Exhibit "H" of Exhibit 25, I have designated "Additions 1905;" By this I mean additions to property. I arrived at this by taking the items in the account known as gas works account and analyzing it, and I check the items back to the cash book and from there to the bills, in order to ascertain that these items were
187 actually additions to the plant. I did this in all cases. The total in the charges to additions to property for 1905, was $14,579.18; this amount was expended as shown by the books of the company for the various things shown by Exhibit "H," such as pipe, labor, etc. Exhibit "I" was made up in the same manner as Exhibit "H" and is for the year 1906, and the total additions to the property that year was $30,866.53. In making these statements of additions to the property, I did not include in either case anything in the way of additions on account of the Marion plant or property. Everything that was charged to Marion went into Marion account. There was a separate account called "Marion Account," and everything that was charged to Marion account went into that.

They kept a separate account and separate pay roll for Marion. Exhibits "H" and "I" of Exhibit 25, do not contain anything relative to Marion. They simply have reference, so far as the books show to the Cedar Rapids plant.

Cross-examination:

I am not a certified accountant. I have never passed an examination. The first work I done in the accounting business was in 1877. I have been engaged in accounting ever since, but not in public accounting. I was also in the real estate business in Chicago for two years. Aside from that I have not been in much of anything but accounting; I have never worked for any account company but the Audit Company of Illinois. As an accountant I did their general accounting, and general bookkeeping for them. Mr. Neisley is the certified accountant of the Audit Company of Illinois. I do not know who incorporated it. Mr. Neisley has been financing it for
188 the past five years.

I spent thirteen or fourteen days in the examination of the Cedar Rapids Gas Company's books; the examination was made here, but the report was made up in Chicago; I was about three days in making up the report. I had no one to assist me in the examination but Mr. Glenn Averill.

I think Mr. Averill directed me to make the examination over the period covered from January, 1905, to December 31, 1906. I made no examination except as to those two years.

I got the items of "Gas manufactured for 1905, 86,723,100 cubic feet, from the book known as record of gas manufactured. It was a special work footed up; I also took off each from it and footed them up. I don't remember the figures as taken off by the month, but there was some little discrepancy between the total for the whole year and the total of the twelve months. I got the item of gas manufactured as the amount that is stated was metered for the whole year,

and was as stated from the footing in the book the company kept, which shows the gas manufactured, metered and leakage, expenditures, etc. I did not take the item from any footing or gross amount but made the footing myself, and I got the footing of 86,723,100 for gas manufactured in 1905, by taking the monthly manufacture and adding them together, and I found that it did not agree with the total for 1905, and I asked Mr. Averill about it and he said it was due to a fast station meter. They tested the meter and found it was 4½ per cent. fast, and they made the correction on the total but did not make it on the monthly statement—made the correction on the yearly record only, which made a difference between the yearly and monthly records of about 2½ per cent., or about two
189 million feet. The meter test was something Mr. Averill told me about. There is a discrepancy of about two million cubic feet between the actual station meter reading and the amount as shown in the corrected record of the gas manufactured. I took the explanation of Mr. Averill and entered on Exhibit 25, the corrected amount as shown by the books, or I took the year's footing. There were words such as "corrected" written on the books, but the corrected reading appeared on the books but I did not make any mention of this correction on my report. The old figures had been erased and the new figures or corrected record placed in their stead. It increased the leakage the difference between the amount shown in the manufactured output and the total as carried into the books. I found the gas used at the works for 1905 in the meter; this is the item of $1,088.00. The daily record of station meter readings is the book marked Plaintiff's Exhibit No. 27, and is the book which I said the corrections have been made in. That book would show the actual meter readings and shows amount to be 86,723,100 cubic feet, for the year 1905; but beginning with August they put in a new station meter and after running it through the year and 1906, it was suspected from the output that the meter was too fast and they tested it and found it was running 4½ per cent. fast, and in order to get the correct output for the period we went back to 1905; that is, they went back to August, 1905, at the beginning of this new meter and corrected the record. I understand the correction was made in 1907. The record shows when the new meter was put in. My recollection is that in getting the item of $1,088.00 for gas used in the works in 1905, I found from the meter records that there had been 1,808 M. cu. ft. of gas used there and I computed it at $1.00 per M. I
190 made the rate $1.00 because that is the rate charged officers and employés of the company. As an accountant I would conclude that the tests of the meter and the corrections of the records were made in June, 1907. The rate of $1.00 per M. of gas used at the works is purely an arbitrary rate and was made at my own suggestion and no one else. My understanding is that it is customary to charge for lights at the works and at the office, and that is the reason why I entered it and considered it as a proper item in the cost of gas. If it was entered at any sum in excess of its actual cost, it would increase according to the books, and the cost per M. as part of the expenses. Coming to the year 1906, I have also an item for gas con-

sumed at the works of $1,115.39, and I got that in the same way as I did that of 1905, and it is figured at $1.00 per M. As an accountant I think it is a proper thing to take a minimum price, without knowing the actual cost, and enter it up as a charge for gas used at the works. I made the entry of $1.00 because I ascertained from the company that it furnished gas to the officers at that price I also have the item in 1906 of $61.64 and $187.45, which comes under the head of distribution and is rents as taken from the books, and light of office as shown by the meter figured at the rate of $1.00. The item of $187.45 is for rent. These items are included in the figures $841.64.

The effect of entering up this light for the works and office at $1.00 was to increase both the expenses and receipts to the same amount. By allowing the company to make an actual profit on the gas used in its office and works you thereby make the figures show a slight increase in the cost of producing the gas.

In my analysis of cost of manufacturing gas as shown in Exhibit "D," I got the item of $525.00 for coke from the books, in
191 the coke account and cupola account, and I took the item of $197.58 for labor from the labor account, the several items going to make up that amount are marked cupola labor, and I took out all the items that belonged to water gas. I had the assistance of the names of the laborers and where they worked; I got them from the books and from Mr. Averill. There is no separate account showing where this labor was. There is an itemized account of labor in the books, which shows whether it is water gas, or coal gas; the books show whether it is retort house or cupola labor and you could readily gather from the books the particular amount that should be apportioned to water gas or coal gas. There is nothing in the journal, cash book or ledger showing the name of the person that performed the work in the cupola or coal gas account, except that the names of the officers are given. The distribution is made in the cash book as coke wages $141.52—this is in October, 1905; annex wages $52.79; retort house wages $50.25; office expense wages $40.20; fittings account wages $120.37; cupola wages $5.43, and G. M. Averill wages $12.15. I don't find that the bookkeeper gave the names on the pay roll in 1906; just the office expense and names of officers.

In Exhibit "D" I have the residuals at $16,577.93. There are a good many items running through that account and to explain, I will say that the credit side of that account represents the coke sales and coke used in the cupola. Here is the January inventory of coke on hand, 3,950. The sales are represented on the credit side of the account and also on that side is contained the amount of coke used in the cupola which is treated as a sale of coke. The charges on the other side are for the labor of handling and the incidental items and
the inventory at the close of the year, 5,920, leaves a profit
192 for the year 1905 on the coke of $16,577.93; and I arrived at the profits on tar in the same way. All I know about those two items is what I obtained from the books. I have checked it over from the books.

I have on Exhibit "D" labor meter reading, sets, removals, are

lamps, incandescents and gratuitous work, $3,759.63. I got part of it out of the fittings account, and some of it from some of the other accounts. It is made up from an analysis of all the accounts. In making the analysis I would take for instance the gas works account; if it is not stated on the books what it is I looked up the checks and check stubs. In the gas works account I might find something that should be passed to distribution, and if I do I take it and carry it to distribution; the same way with the articles of expense account; they practically consist of coupon, interest and discount, taxes and meters. I identified the items by going over the bills, checks and so on there are a good many of those small items that it is almost impossible to identify, the small items that do not state what they are for except it was charged to gas works, in that case I had to put it in miscellaneous.

To explain the fittings account for 1905. I made an inventory of that account on the 1st day of January, $3,163.00. Now there are the receipts for sales on the credit side and the charges of labor and supplies of all kinds, also merchandise, are in here for things like mantels and lamps, those sales are included on the credit side. The stock account at the close of the year represents the inventory of balances of loss, profit and loss $6,758.98, and gratuitous work, taking care of arc lamp maintenance and supplies, pay roll and matters of that kind. This has all been analyzed but I don't find the analysis among my papers. That account as it stands on the ledger
193 shows a loss of some six or seven thousand dollars. To determine what these different items were, I took the receipts from the sales.

Q. How did you distinguish distribution labor from gratuitous labor?

A. A portion of distribution labor was for new stoves set for which there was no charge made. I couldn't exactly identify that labor, because it was mixed up with stove labor, but as a basis for that item I took a number of new gas stoves set for which no charges were made. I think I got the information as to the new stoves set from the meter books. The increase in meters in 1905 was something like 709; I got these figures from the meter book, Exhibit 26. There is no way to tell exactly from the fittings account what the gas stove account amounted to. But it wouldn't make any difference in the outcome, for if it wasn't in one account it would be in another; but, of course, if you put an item of the construction account into the operating account it would increase the cost of gas, and it would be entirely improper.

I have not estimated anything for depreciation; I have included what I found in the books but I did not classify it. I had nothing to do with that; it was charged on the books, that is, all I know about it. If they take out a small piece of mains or machinery and put in a piece of larger machinery a part of it should be charged to renewals and a part to repairs, and the part that would go into either account would depend on your judgment somewhat, and also on the cost of the stuff that was taken out. I would say that the cost of the old part taken out would be approximately a fair charge to renewals and repairs; depreciation is to recover what you don't repair. Whereever

a portion of the plant is renewed the value of the old stuff
194 should be charged to renewals and repairs, even though you keep up the plant each year as they do; still there is constant depreciation. I find a fitting account as far back as 1897. I suppose if one wanted to show an increased cost of gas for 1905 and 1906 they could put a great many articles during those two years into the fittings account, or it could be done under any account. I did not find any padding of the fittings account. They could have put it all in those two years, but they were not supposed to do so. For 1902 the fittings account showed a profit of $283.99; 1903 it showed a loss of $972.80; 1904 a loss of $39.60. In 1905 and 1906 it jumped up to about six or seven thousand dollars. I think that in a sense, it is proper to put this new work in one year, sometimes it is spread over four or five years; it is often done that way and just as often done the other way. It is a matter of judgment. By putting it all into 1905 and 1906 it has increased the cost of gas. The $5,000.00 or $6,000.00 in that fittings account would increase the cost of gas for 1905 and 1906, 4c or 5c per M. c. f., if that amount was considered as not properly in there. If the fitting account of 1905 was apportioned over a period of four years it would reduce the cost of gas for that year from 4 to 4½c per M., but you could not take all the gratuitous labor.

The item of $1496.08 renewals and repairs for the year 1905, I got from the books. I had no assistance from outside. Some of the bills show what the pipe was for delivered on the streets.

The bills I examined were identified by having Mr. Averill's O. K. on them. The bills were practically all Cedar Rapids bills, pur-
chases here, delivered on the streets. Mr. Glenn Averill gave
195 me the names of men employed on the streets and the wages they received, which was essential for me to make the apportionment.

Q. There was no way for you to determine as an accountant as to what was a repair or renewal?

A. Well! except I used a little horse sense once in a while. I did not always have to have statements from Glenn Averill to determine that; I found some of the bills were from the Iowa Windmill and Pump Co. They don't buy pipe in Cedar Rapids by the car load lots. The items for repairs to machinery $724.72, I took off from the bills. I could readily determine by looking at the bills that they were for repairs to buildings and machinery, and the bills stated what they were for, and I could determine the items that went to make the $724.72 from the books. I had to send to the bank sometimes for checks and drafts. If I couldn't get all the information I wanted from the books I sent for those checks.

The footing in this distribution making this total charge for repairs and renewals of $2,220.80, is a part of the cost of making gas and distributing it, and aggregates something like .029 per cent.; it was so small I could not believe it. I think it was not correct. It might be an improper distribution of the account, and it would occur if the repairs and renewals had not been made. The general expenses are taken from the books altogether.

I think the item of $2,220.80 for taxes, under general expenses, covers the tax on the annex also, and I have included that in the general expense, and I also included the depreciation of $10,000.00. The income from the houses on the annex was $292.91 in 1905. I think that if the annex is not used for manufacture of gas the tax and income should be treated separately from the cost of gas.

196 As an accountant, familiar with auditing books of public service corporations, I knew what would be proper and what improper to charge. I assumed the depreciation as given on the books. The amount of depreciation charged off for the two years I think was a proper item to be entered for the two years, and in my judgment they are too low; they should have adopted some rule; ordinarily 4 per cent. is the rule, and the charge for these two years does not come to that and is a little lower than customary. It is customary to enter a charge of about 4 per cent. for depreciation on the whole physical property, and I could give instances where it has been done, but I desire to claim my privilege on that question. I say there is a rule among gas companies to write such a sum as this company has for depreciation; I don't say how general it is. I know of a good many instances the per cent. depreciation on a valuation in the vicinity of $350,000.00. This is a valuation that I have gotten independent of the books. I examined the books as to the value of the property and I also have a balance sheet of value of the property. On the balance of January 1, 1907, Exhibit "C," I have placed an item on the credit side, "real estate and plant $376,593.52, which I got from the books. I cannot say whether that included the franchise or not; I didn't analyze that item at all, I just took that item as it appeared on the books. I also have additions to the property, 1906, of $30,866.53. That is made up of the account called Gas Works Account, which is an account carried in the books, the original entry against the Cedar Rapids Gas Co., which I assume to be the franchise account, and $7,500.00 of real estate. The separate figures are $150,000.00 and then $75,000.00. The $150,000.00 I assume is the franchise; it is opposite capital stock $150,000.00.

197 The 4 per cent. depreciation of the physical properties was not anything I found in the books, but was gathered according to the custom of other companies. I have Marion plant account $25,974.60, and Bills Payable $31,000.00; as I understand it was money borrowed and put into the Marion plant. Assuming that this money was borrowed to go into the Marion plant, then the interest on that money should be charged to the Marion plant and should not be charged to the Cedar Rapids plant at all.

The way they keep their coal and oil account they use more than they charge off. In other words, they are using from their inventory, coal which has been paid for, and at the close of the year instead of showing an inventory of coal, it shows there is a credit to the coal account of $1,941.42, and to the oil account of $270.51. You see they started in 1906 with Gas Coal Account 474—the credit at that time was $1,941.42—instead of showing an inventory to credit of coal which remained on hand, on deposit, it actually showed

they owed the coal account $941.42, and instead of carrying it on the debit side, I adopted it as a deficit. The method of keeping the coal and other accounts is, when the bills come in they do not credit the bills up to the people from whom they purchase but charge it to the cost, and they debit a car of coal to cost of coal used, and it should show an inventory of gas coal on hand, and they actually use more coal than it showed and I had to take it from the ledger, which showed a balance of that much.

There seems to have been an inventory of the gas coal on hand January 1, 1902, which amounted to $480.18, and 1903 there was a credit of $345.93; December 31, 1903, there was a balance of
198 $1,064.52, inventory balance, and debit balance of $4,179.58 December 31, 1904. The gas coal shows a credit balance December 31, 1904, of $1,079.43.

The gas coal account is simply coal shed account. Assuming they start with an inventory full on hand in shed, the coal shipments or purchases as they come in are put into the shed. The bills at the time are not credit, or the payment for the coal doesn't enter the books until the bills are paid, which may be thirty or sixty days later. In the meantime coal is going out of the shed and is being consumed, and at the close of the year the consumption of coal, as against the amounts paid for coal, might be a credit balance, or might create an inventory balance and the difference, I presume, would be represented in accounts payable. We have to compute the amount of coal taken from the shed from the consumption. In getting at this account I have started with the stock balance in the shed and carried it from year to year to the present time, to the close of the account, and have assumed that they owe for what is in the shed. If they took the coal at two different prices, that is, charged for the coal in the shed at one price and charged the retort house another, it would make a difference. The amount I have put in there is the amount charged to the retort account. I took that from the ledger. I can tell from their books how much coal is charged to the retort house and that is all I take into consideration. Coal carbonized represents coal charged to retort house.

Q. If we should show by the books that coal was charged up to the retort house at too high a rate, then that sum, or the difference between the two, should be deducted from these sums?

A. If those two rates are too high—but there is a legiti-
199 mate addition to the charge-out of that coal, which is the handling of it, the purchase price should be in Cedar Rapids, and the cost of handling has to be added to that when it goes to the retort house.

(Continued on page 371.)

Glenn M. Averill.

Plaintiff then produced GLENN M. AVERILL, who being sworn testified on direct examination as follows:

I live in Cedar Rapids; am thirty-nine years old; began working for the plaintiff prior to 1888, during summer vacations, driving the

tool wagon on the streets while they were laying mains and service pipe, also cleaning pipe, scrubbing flanges, etc.; in 1888 I began working steady; I read meters and collected bills and after I had been there about a year and a half the superintendent left and I had charge of the work from that time on until the present time, except for five years from 1892 to 1897, when I was in the wholesale grocery business, and the company had another superintendent; I was made secretary in 1890 and have been since that time, being secretary during the five years I was in the wholesale grocery business; in 1897 I assumed general charge of the works and have acted in that capacity since that time.

The works were originally built in 1872 or 1873; my father secured control of the company in 1874; during the first ten years the company built ten miles of mains; the works were rebuilt in 1883, that is, there were new works built including a holder; the only part of the first works that was used was the small holder; new buildings were built, new retort houses, new engine room, new purifying house and sponging room.

Of the mains that were in use in 1883, and prior to that
200 date, there still remains one on Fourth avenue, from First to Eighth street, one on Third avenue, from a little beyond Fifth street to Eighth street, one on Second avenue, from middle of block between Fifth and Sixth streets to Twelfth street, and one on Fourth street, from First avenue to "D" avenue; there is also an old main underneath the Milwaukee track, but not in use; these are all of the old mains. I have no record of the company showing amount of mains prior to the present management.

The second building or construction of the present plant was commenced twenty years after the first construction, that is in 1903, when we built the large 500,000 foot holder, and since then we have practically rebuilt everything that was in the plant of 1883, except the buildings.

It would be impossible to increase the plant in the present buildings. There is no more room in the yards for buildings and we have no place to increase the condensing, scrubbing and purifying apparatus—those buildings being so crowded now that it was almost impossible to get the present apparatus in there, and the men can scarcely work on account of the excessive heat, and the buildings are inadequate for any increase of the machinery. When we have to increase again we will have to go to a new location entirely, to-wit: across the street. My judgment is that it was necessary to secure the lots in what is known as the Annex, in Block 9, in anticipation of the needs of the near future, and I base my judgment on my knowledge of the operation of the plant and the necessary room it takes and the increase we can reasonably expect in the business.

The old main on Fourth avenue is not likely to be changed, the
201 one on Third avenue will have to be replaced and the Second avenue line should have been replaced this year—they are both inadequate now.

North of First avenue, in the Central Park district, which is

growing rapidly, there is poorer pressure than at any other place in the city and the feeds to those mains are inadequate and will have to be doubled, and the larger mains from the works out in the Central Park direction, north of First avenue, will have to be relaid; the screwing of taps and street Ls through the pipe in the small mains obstructs the flow of gas and as the number of taps increases the more the obstruction, and there is a tendency to convert houses into flats, to put in two stoves where there used to be one only; this is a matter that cannot always be anticipated, these pipes having been supplying the gas properly ever since the works were built until the last two years. The mains that were laid in Central Park when new were a great deal larger than the mains on Second, Third and Fourth avenues originally, and yet are too small now.

Plaintiff now has 40½ miles of mains; this does not include any of the Marion line; about 4½ miles of this is high pressure on the east side of the river, and between two and three miles is high pressure on the west side; also about 4 miles from works to Kenwood Park. The high pressure on the west side serves every thing north of "F" avenue; the high pressure main runs west to Tenth street and then along Tenth street across the main on the avenues and in four places out there near the ends of the mains it is fed by a reducing governor into the low pressure mains and practically all the gas north of "F" avenue is fed from the high pressure main. The high pressure was made necessary in order to properly take care of
202 the consumption in that district. On the east side the high pressure main connects two blocks off of First avenue at Twentieth street, and feeds into the four-inch main at "B" avenue and Twentieth street, there being a governor at "B" avenue and Twentieth street.

We have consumers all along the Kenwood Park high pressure line, and it does not parallel any other line, except about 500 feet on First avenue—the rest being new territory, and will be used for supplying portion as that section is built up. We are now supplying individuals and private houses from the high pressure by means of a house governor.

Ordinarily the pressure on the street main system is simply the weight of the gas holder and is equal to a column of water three or four inches high. In the high pressure system we put in pumps and pump the gas from the holder into these high pressure mains under a ten pound pressure, so that we can distribute a larger volume of gas through smaller pipe. Where the high pressure line crosses the low pressure line there is a governor and man hole. There is ten pounds pressure on one side of the governor and the pressure of three inches of water on the other. These governors are so constructed and adjusted that the consumption throughout the district fed opens the governor and the gas flows from the high pressure into the low pressure mains, and will maintain a uniform pressure between the governor and the point of consumption. The governors work automatically.

The plaintiff then produced the book marked Exhibit No. 26, being monthly and yearly record of gas manufactured, sold and metered, the same being as follows:

203 PLAINTIFF'S EXHIBIT No. 26.

Report for Month of January, C. R. Gas Light Co.

Year.	Send Out.	M Sales.	Leakage.	C. P.	Meters.
1902	4,611,390	4,376,800	234,590	20	1882
1903	5,635,930	5,054,200	581,700	20	2109
1904	6,038,900	5,379,700	659,200	..	2321
1905	6,929,860	6,019,100	910,760	20	2600
1906	9,228,340	8,199,500	1,028,840	18	3309
....	.....	M453,100	.....	..	224
1907	11,141,600	9,111,800	1,576,700	18	3738
		Month of February.			
1902	4,109,370	3,881,200	228,170	20	1882
1903	4,845,000	4,585,300	259,700	20	2109
1904	5,938,670	5,017,300	921,370	20	2321
1905	5,850,000	5,210,500	639,500	..	2610
1906	7,727,240	7,052,300	674,940	18	3309
....	.....	M386,400	.....	..	274
1907	9,701,720	7,289,000	2,026,320	18	3742
		Month of March.			
1902	4,338,450	4,001,900	336,550	20	1905
1903	5,105,050	4,593,200	511,850	20	2119
1904	6,116,950	5,329,800	787,150	20	2339
1905	6,199,280	5,640,300	558,980	..	2620
1906	8,487,900	7,500,100	987,800	18	3309
....	.....	M379,800	.....	..	275
1907	10,337,860	8,403,800	1,554,260	18	3758
		Month of April.			
1902	3,872,760	3,596,000	276,760	20	1929
1903	4,940,340	4,782,100	155,240	20	2149
1904	5,629,570	5,090,200	539,370	20	2393
204					
1905	5,965,580	5,055,100	910,480	..	2641
1906	8,136,960	6,850,800	1,286,160	18	3319
....	.....	M423,500	.....	..	275
1907	10,246,690	8,957,600	1,289,090	..	3771
		Month of May.			
Year.	Send Out.	M Sales.	Leakage.	C. P.	Meters.
1902	4,002,380	3,585,500	416,880	20	1989
1903	5,015,070	4,408,600	606,470	20	2201
1904	5,565,690	4,715,800	849,890	20	2446
1905	6,419,820	5,573,000	846,820	..	2791
1906	7,922,320	7,168,800	753,520	18	3410
....	.....	M493,000	.....	..	331
1907	10,832,470	9,713,500	1,118,970	15.5	3836

Month of June.

1902	3,991,810	3,456,100	535,710	20	2009
1903	4,859,050	4,315,600	543,450	20	2244
1904	5,344,720	4,926,600	418,120	20	2488
1905	6,396,000	5,601,000	936,770	..	2913
1906	7,503,920	6,925,900	678,020	18	3461
....	.....	M516,700	.....	..	353
1907	9,555,130	8,730,200	824,900	16.3	3887

Month of July.

1902	4,028,140	3,613,600	414,540	20	2029
1903	4,822,490	4,210,800	611,690	20	2264
1904	5,444,440	4,738,600	705,840	20	2512
1905	7,133,470	5,763,200	1,370,270	..	3009
1906	7,574,180	6,551,700	1,022,480	18	3521
....	.....	M588,800	.....	..	371
1907	8,547,840	8,133,500	414,340	..	3934

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Month of August.

1902	4,200,950	3,737,200	463,750	20	2046
1903	4,968,380	4,234,800	733,580	20	2276
1904	5,783,450	5,082,400	701,050	20	2519
1905	7,455,340	6,402,000	1,053,340	..	3143
....	.....	M125,400	.....	..	....
1906	8,044,080	7,071,600	847,080	18	3596
....	.....	M638,800	.....	..	375
1907	9,034,900	8,459,800	575,100	16.51	3969

Month of September.

1902	4,960,960	4,187,100	773,860	20	2065
1903	5,628,660	5,189,200	439,460	20	2311
1904	6,514,680	5,780,000	734,680	20	2571
1905	8,418,800	7,195,200	1,223,600	20	3244
....	.....	M225,800	.....	..	156
1906	8,966,000	7,765,600	974,600	18	3680
....	.....	M648,300	.....	..	381
1907	10,080,780	8,289,600	1,142,880	19.23	4025

Month of October.

1902	5,009,700	4,751,200	258,500	20	2081
1903	6,246,200	5,659,100	587,100	20	2330
1904	6,743,410	6,087,200	656,210	20	2600
1905	9,017,210	8,221,600	795,610	20	3300
....	.....	M314,200	.....	..	225
1906	10,349,000	9,047,600	987,200	18	3730

Month of November.

1902	5,002,140	4,534,300	467,840	20	2089
1903	6,047,860	5,380,900	666,960	20	2336
1904	6,888,760	6,213,800	674,960	20	2600
1905	8,955,420	7,550,100	1,405,320	20	3308
....	.....	M413,600	.....	..	270
1906	10,220,000	9,007,400	799,000	18	3732

206 *Month of December.*

1902	6,036,880	5,806,900	189,480	20	2109
1903	6,661,390	6,467,100	194,290	20	2336
1904	7,422,390	6,844,000	578,390	20	2600
1905	9,854,290	9,551,200	303,090	20	3309
....	.....	M394,200	.....	..	274
1906	11,112,720	9,264,800	1,453,720	18	3738

Yearly Report of the Cedar Rapids Gas Light Company.

Year.	Send Out.	M Sales.	Leakage.	Per Ct.
1902	54,164,930	49,527,800	4,637,130	8.1
1903	64,757,270	58,880,900	5,876,370	9.0
1904	73,430,630	65,205,400	8,225,230	11.2
1905	86,723,100	77,782,300	8,940,800	10.2
....	.....	M1,473,200	.....	....
1906	100,764,000	92,306,100	8,457,900	8.5

Year.	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	Meter Gain.
1902	43,974,000	4.88	10,159,930	42	4.9	238
1903	56,585,320	4.80	8,673,630	42	5.2	227
1904	59,101,600	4.72	14,229,900	39	4.4	264
1905	835,560,000	5.02	5,073,490	42	4.7	709
....	.....	....	.....	..	...	274
1906	74,858,300	4.70	30,819,900	36	3.9	429

207 EXHIBIT No. 31.

Being Trial Balances.

January 20, 1905.

Gas works	$214,519.09
Gas	324.37
Coke (1,439.63)	3,027.88
Fitting (666.07)	3,196.08
Tar (251.40)	469.00
Office expense	92.20
Dividend	1,500.00

Retort house	133.71	
Repair	129.86	
Purifying	31.10	
Gas coal	1,672.63	
Oil	314.49	
Cedar Rapids National Bank	326.54	
Bills payable		$9,000.00
G. M. Averill		166.60
Parker Russell		84.70
A. W. Thompson	17.13	
Bond		75,000.00
Stock		149,556.67
Annex	7,453.00	
Cash	600.89	
	$233,807.97	$233,807.97

208 February 20, 1905.

Gas works	$214,519.09	
Gas		$6,899.15
Coke (1725.96)	1,048.40	
Fittings (551.21)	3,201.16	
Tar (255.75)	422.10	
Office expense	598.53	
Dividend	3,000.00	
Retort house	3,844.87	
Repair	222.14	
Purifying	124.49	
Gas coal	1,978.91	
Oil	314.49	
Andy Kydd	10.00	
Cedar Rapids National Bank	592.07	
Bills payable		6,000.00
A. T. Averill		100.00
A. W. Thompson	17.13	
Bond		75,000.00
Stock		149,556.67
Parker Russell M. & Mfg. Co.		77.80
Annex	7,385.75	
Cash	354.11	
	$237,633.62	$237,633.62

March 20, 1905.

Gas works	$214,522.40	
Gas		$12,982.72
Coke (2085.90)		85.22
Fittings (535.13)	3,444.87	
Tar (316.25)	422.10	

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Office expense	1,070.23	
Expense	75.00	
Retort house	6,967.94	
Dividend	3,150.00	
Repair	312.18	
Purifying	347.82	
Gas coal	1,291.16	
Oil	314.49	
C. R. National Bank	1,558.48	
Bills payable		3,000.00
A. T. Averill		200.00
Bond		75,000.00
Stock		149,556.67
Park Russell		77.80
Annex	7,346.25	
Cash	79.49	
	$240,902.41	$240,902.41

April 20, 1905.

Gas works	$214,584.42	
Gas		$19,325.53
Coke (1418.90)		1,146.59
Fitting (652.28)	3,643.28	
Tar (41.90)		33.40
Expense	3,657.72	
Office expense	1,574.73	
Dividend	4,650.00	
Retort house	10,192.12	
Cupola		
Repair	402.69	
Purifying	420.32	
Gas coal	930.81	

210

Oil	314.49	
Andy Kydd	60.72	
C. R. National Bank	661.53	
Bills payable		3,000.00
A. T. Averill		300.00
Bond		75,000.00
Stock		149,556.67
Park Russell		77.80
Eclipse Stove Co.		35.50
Annex	7,306.75	
Cash	75.91	
	$248,475.49	$248,475.49

May 20, 1905.

Gas works	$217,395.00	
Gas		$25,086.30
Coke (1135.04)		1,588.48
Fittings (544.35)	4,656.44	
Tar		50.90
Expense	3,661.47	
Office expense	2,094.88	
Dividend	6,000.00	
Retort house	13,331.27	
Cash	333.72	
Repair	591.53	
Purifying	514.24	
Gas coal	1,490.63	
Oil	314.49	
Andy Kydd	47.72	
C. R. National Bank	157.42	
Bills payable		3,000.00
A. T. Averill		400.00
211		
G. M. Averill	4.50	
New purifying room	427.72	
Bond		75,000.00
Stock		149,556.67
Parker Russell M. & Mfg. Co.		77.80
Annex	7,297.42	
Eclipse Stove Co.		3,558.30
	$258,318.45	$258,318.45

June 20, 1905.

Gas works	$218,582.22	
Gas		$31,054.51
Coke (928.22)		2,062.74
Fitting (742.25)	5,044.14	
Tar (61.50)		309.90
Expense	3,661.47	
Office expense	2,663.68	
Dividend	6,000.00	
Retort house	16,651.77	
Repair	719.56	
Purifying	584.74	
Gas coal	1,333.29	
Oil	314.49	
Andy Kydd	18.68	
C. R. National Bank	141.82	
Bills payable		3,000.00
A. A. Averill		300.00
New purifying room	3,106.00	

Bond		75,000.00
Stock		149,556.67
Parker Russel M. & Mfg. Co.		77.80
Eclipse Stove Co.		5,558.20
212		
Annex	7,297.42	
Cash	800.54	
	$266,919.82	$266,919.82

July 20, 1905.

Gas works	$221,166.26	
Gas		$36,963.30
Coke (850.43)		2,481.64
Fittings (919.71)	6,048.61	
Tar (56.00)		458.99
Expense	3,661.47	
Office expense	3,189.79	
Dividend	6,000.00	
Retort house	20,014.23	
Repair	862.00	
Purifying	655.24	
Gas coal	1,347.14	
Oil	314.49	
Andy Kydd	18.68	
C. R. National Bank	665.53	
Bills payable		3,000.00
A. T. Averill		4,092.50
New purifying room	5,718.33	
Bond		75,000.00
Stock		149,556.67
Parker Russell M. & Mfg. Co.		77.80
Eclipse Stove Co.		5,967.05
Annex	7,304.79	
Cash	631.39	
	$277,597.95	$277,597.95

213 August 20, 1905.

Gas works	$222,155.30	
Gas		$49,243.99
Coke		2,815.64
Fitting	6,656.56	
Tar		484.69
Expense	3,711.47	
Office expense	3,743.14	
Dividend	6,000.00	
Retort house	23,794.59	
Repair	974.37	

Purifying	1,192.02	
Gas coal	702.38	
Oil	314.49	
W. W. Rose		70.00
C. R. National Bank	3,415.86	
Bills payable		3,000.00
A. T. Averill		4,192.50
New purifying room	3,715.69	
Bond		75,000.00
Stock		149,556.67
Annex	7,304.79	
Eclipse Stove Co	3,652.47	
Cash	1,335.30	
	$288,015.96	$288,015.96

September 20, 1905.

Gas works	$223,132.18	
Gas		$55,241.25
Coke (1348.28)		3,703.39
Fitting (1015.90)	7,662.99	
214		
Tar (255.35)		526.69
Express	3,711.47	
Office expense	4,211.59	
Dividend	6,000.00	
Retort house	27,538.88	
Repair	1,097.48	
Purifying	1,288.02	
Gas coal	982.34	
Oil	314.49	
C. R. National Bank	933.05	
Bills payable		3,000.00
A. T. Averill		6,092.50
G. M. Averill		175.00
New purifying room	7,485.68	
Bond		75,000.00
Stock		149,556.67
Annex	7,363.29	
Laclede Fire B. Co.	100.00	
J. R. Meader	962.10	
Cupola	12.83	
Cash	499.11	
	$293,295.50	$293,295.50

October 20, 1905.

Gas works	$225,047.89	
Gas		$61,724.62
Coke (1932.48)		5,389.78
Fitting (841.29)	8,373.55	
Tar (209.75)		724.74
Expense	6,173.04	
Office expense	4,849.09	
Dividend	6,000.00	
215		
Retort house	31,569.46	
Repair	1,340.58	
Cupola	448.10	
Purifying	1,314.27	
Gas coal	691.37	
Oil	39.49	
Andy Kydd	12.33	
C. R. National Bank	119.72	
Bills payable		3,000.00
A. T. Averill		6,192.50
New purifying room	7,708.47	
Bond		75,000.00
Stock		149,556.67
Laclede Fire B. Co.	100.00	
J. R. Meader		567.26
Annex	7,367.79	
Cash	1,000.00	
	$302,155.57	$302,155.37

November 20, 1905.

Gas works	$227,896.42	
Gas		$69,318.93
Coke (2418.96)		7,625.06
Fitting (1066.06)	9,077.98	
Tar (32.75)		873.07
Express	6,213.54	
Office expense	5,412.02	
Dividend	9,000.00	
Retort house	35,785.14	
Repair	1,554.13	
Cupola	831.93	
Purifying	1,388.07	
216		
Gas coal		344.72
Oil	93.35	
C. R. National Bank	220.88	

Bills payable		3,000.00
A. T. Averill		6,292.50
New purifying room	7,708.47	
Bond		75,000.00
Stock		149,556.67
Laclede Fire Brick Co.	100.00	
J. E. Meader		968.76
Annex	7,352.45	
Cash	345.33	
	$312,979.71	$312,979.71

December 20, 1905.

Gas works	$228,977.32	
Gas		$76,738.51
Coke (2800.87)		9,928.38
Fitting (770.62)	9,139.70	
Tar (35.25)		1,118.82
Expense	6,213.54	
Office expense	5,912.77	
Dividend	11,800.00	
Retort house	40,003.57	
Repair	1,692.70	
Cupola	1,295.93	
Purifying	1,436.82	
Gas coal		898.42
Oil		56.08
C. R. National Bank	120.84	
Bills payable		3,000.00
A. T. Averill		6,392.50

217

New purifying room	8,235.97	
Bond		75,000.00
Stock		149,556.67
Laclede Fire Brick Mfg. Co.	100.00	
J. R. Meader	52.74	
Annex	730.00	
Cash	400.18	
	$322,689.38	$322,689.38

December 31, 1905.

Gas works	$229,093.52	
Gas		86,701.04
Coke		16,577.93
Fitting	6,758.98	
Tar		1,295.57
Expense	6,213.54	

Office expense	6,785.37	
Dividend	12,000.00	
Retort house	44,437.57	
Repair	1,940.90	
Cupola	1,828.93	
Purifying	1,454.67	
Gas coal		1,941.42
Oil		270.51
C. R. National Bank		13.80
Bills payable		3,000.00
A. T. Averill		9,093.62
New purifying room	8,235.97	
Bond		75,000.00
Stock		123,719.79
J. R. Meader	47.74	
Annex		292.91
218		
G. M. Averill		175.00
Bills payable (labor accounts)		1,060.20
Cash	364.60	
	$319,131.79	$319,131.79

January 20, 1906.

Gas works	$230,246.07	
Gas	1,564.47	
Coke	3,465.74	
Fitting	2,307.13	
Tar	166.75	
Office expense	109.40	
Retort house	47.43	
Repair	68.94	
Cupola	40.00	
Purifying	38.70	
Gas coal		799.98
Oil	291.43	
C. R. National Bank		
Bills payable		6,000.00
A. T. Averill		793.62
New purifying room	8,735.97	
J. R. Meader	42.74	
Bond		75,000.00
Stock		172,994.16
Annex	7,455.30	
Cash	354.03	
	$255,587.76	$255,587.76

February 20, 1906.

Gas works	$230,685.70	
Gas		6,370.69
219		
Coke	62.51	
Fitting	2,118.52	
Tar	166.25	
Office expense	744.80	
Retort house	4,642.52	
Repair	281.26	
Cupola	446.00	
Purifying	78.70	
Gas coal	688.15	
Oil	280.95	
C. R. National Bank	264.48	
Expense	168.50	
Dividend	5,400.00	
Bills payable		8,000.00
A. T. Averill	943.62	
New purifying room	9,388.43	
J. R. Meader	27.74	
Bond		75,000.00
Stock		172,994.16
Annex	7,405.00	
Cash	358.96	
	$263,308.47	$263,308.47

March 20, 1906.

Gas works	$231,240.45	
Gas		$13,550.18
Coke (1655.19)		2,460.58
Fitting (674.37)	2,279.89	
Tar (266.10)	155.75	
Expense	168.50	
Office expense	1,301.25	
Dividend	6,000.00	
220		
Retort house	8,668.10	
Cupola	771.00	
Repair	579.64	
Purifying	111.70	
Gas coal	3,819.58	
Oil	484.33	
C. R. National Bank	186.08	
Bills payable		8,000.00
A. T. Averill		1,093.62

G. M. Averill		200.00
New purifying room	9,427.02	
Gas Machinery Co.	359.70	
Bond		75,000.00
Stock		172,894.16
J. R. Meader	4.24	
Annex	7,383.94	
Cash	357.37	
	$273,298.54	$273,298.54

April 20, 1906.

Gas works	$231,363.89	
Gas		$20,987.36
Coke (1213.37)		4,011.04
Fitting (589.77)	2,503.70	
Tar (390.25)	138.85	
Expense	3,666.45	
Office expense	1,909.00	
Dividend	6,000.00	
Retort house	12,722.77	
Cupola	1,139.00	
Repair	1,243.40	
Purifying	146.20	

Gas coal	1,313.96	
Oil	284.33	
Andrew Kydd		11.75
C. R. National Bank	297.64	
Bills payable		11,000.00
A. T. Averill		4,543.62
G. M. Averill		1,000.00
New purifying room	9,427.02	
Bond		75,000.00
Stock		172,994.16
Gas Machinery Co.	2,984.70	
J. R. Meader	.24	
Annex	7,336.04	
Marion	6,402.11	
Cash	668.63	
	$289,547.93	$289,547.93

May 20, 1906.

Gas works	$241,765.04	
Gas		$27,771.68
Coke (1166.59)		4,675.33
Fitting (868.72)	2,864.00	
Tar (400.25)	120.10	

Expense	3,666.45	
Office expense	2,443.65	
Dividend	6,000.00	
Retort house	16,299.58	
Repair	1,402.92	
Cupola	1,736.96	
Purifying	190.45	
Gas coal	1,059.42	
Oil	208.45	
222		
Cedar Rapids National Bank		1,374.36
A. T. Averill		2,893.62
G. M. Averill		1,200.00
Bills payable		16,000.00
Bond		75,000.00
Stock		172,994.16
Annex	7,295.54	
Marion	12,486.62	
J. R. Meader	.24	
Gas Machinery Co.	4,000.00	
Cash	369.72	
	$301,909.14	$301,909.14

June 20, 1906.

Gas works	$244,030.20	
Gas		$35,031.55
Coke (752.57)		5,465.45
Fitting (715.95)	2,914.60	
Tar (51.60)		351.05
Expense	3,666.45	
Office expense	3,078.15	
Dividend	6,000.00	
Retort house	19,315.56	
Repair	2,011.33	
Cupola	2,681.76	
Purifying	223.45	
Gas coal	2,518.62	
Oil	417.71	
Cedar Rapids National Bank	1,597.05	
A. T. Averill		150.00
Bills payable		29,000.00
Bond		75,000.00
223		
Stock		172,994.16
Annex	7,252.29	
Marion	15,916.95	
J. R. Meader	.24	

Gas Machinery Co	6,000.00	
Cash	367.85	
	$317,992.21	$317,992.21

July 20, 1906.

Gas works	$244,954.23	
Gas		$42,202.76
Coke (596.52)		6,071.36
Fitting (572.01)	3,256.07	
Tar (43.25)		342.55
Expense	3,756.45	
Office expense	3,654.95	
Dividend	6,000.00	
Retort house	22,250.23	
Repair	2,180.92	
Cupola	3,431.76	
Purifying	257.95	
Gas coal	1,100.32	
Oil	94.50	
Cedar Rapids National Bank	234.99	
A. T. Averill		300.00
G. M. Averill		200.00
Bills payable		29,000.00
Bond		75,000.00
Stock		172,994.16
Annex	7,225.69	
Marion	19,240.23	
Gas Machinery Co	8,000.00	
224		
J. R. Meader	.24	
Cash	472.30	
	$326,110.83	$326,110.83

August 20, 1906.

Gas works	$246,056.26	
Gas		$49,007.34
Coke (883.84)		6,690.78
Fittings (558.75)	4,136.79	
Tar (147.75)		362.05
Expense	3,831.45	
Office expense	4,155.45	
Dividend	8,000.00	
Retort house	25,673.92	
Repair	2,371.13	
Cupola	4,215.76	
Purifying	298.75	

Gas coal	1,599.59	
Oil	165.15	
Andy Kydd		20.00
Cedar Rapids National Bank	107.05	
A. T. Averill		900.00
G. M. Averill		400.00
Bills payable		29,000.00
Bond		75,000.00
Stock		172,994.16
Annex	7,171.97	
Marion	20,641.43	
Gas Machinery Co	8,000.00	
J. R. Meader		2,000.00
Economy Furnace Co		575.00
225		
Cash	524.63	
	$336,949.33	$336,949.33

September 20, 1906.

Gas works	$247,877.93	
Gas		$56,390.50
Coke (999.87)		8,382.93
Fitting (797.89)	4,863.82	
Tar (152.00)		365.65
Expense	4,458.86	
Office expense	4,927.90	
Dividend	9,700.00	
Retort house	28,723.70	
Repair	2,534.22	
Cupola	5,232.27	
Purifying	330.15	
Gas coal		436.77
Oil	3.28	
Cedar Rapids National Bank	250.44	
A. T. Averill		750.00
G. M. Averill		600.00
Bills payable		29,000.00
Bond		75,000.00
Stock		172,994.16
Annex	7,110.47	
J. R. Meader		2,310.00
Gas Machinery Co	8,000.00	
Parker Russell Mfg. Co	100.00	
Economy Furnace Co		575.00
Cash	413.43	
Marion	22,278.54	
	$346,805.01	$346,805.01

226 October 20, 1906.

Gas works	$258,468.21	
Gas		$69,840.91
Coke (1453.03)		9,669.28
Fittings (249.20)		377.15
Expense	6,416.36	
Office expense	5,503.59	
Dividend	11,600.00	
Retort house	32,335.69	
Repair	2,716.30	
Cupola	6,465.27	
Purifying	375.15	
Gas coal		1,970.69
Oil	139.00	
Cedar Rapids National Bank	167.08	
A. T. Averill		900.00
G. M. Averill		1,900.00
Bills payable		31,000.00
Bonds		75,000.00
Stock		172,994.16
Annex	7,051.47	
Marion	23,767.99	
J. R. Meader	2,035.97	
Andy Kydd		80.00
Parker Russell Mfg. Co.	600.00	
Economy Furnace Co.		575.00
Cash	433.05	
	$364,307.19	$364,307.19

November 20, 1906.

Gas works	$259,299.77	
Gas		$79,294.25
Coke (1593.82)		11,339.14
227		
Fitting (1032.90)	6,956.50	
Tar (420.05)		424.05
Expense	6,610.53	
Office expense	6,080.75	
Dividend	11,600.00	
Retort house	36,577.99	
Repair	3,046.46	
Cupola	7,420.27	
Purifying	422.90	
Gas coal		1,705.07
Oil		193.41
Cedar Rapids National Bank	464.89	
A. T. Averill	54.12	
G. M. Averill		1,100.00

Bills payable		31,000.00
Bond		75,000.00
Stock		172,994.16
J. R. Meader	1,679.84	
Annex	6,987.42	
Marion	25,494.51	
Parker Russell Mfg. Co	600.00	
Economy Furnace Co		575.00
Cash	329.13	
	$373,625.08	$373,625.08

December 20, 1906.

Gas works	$259,908.45	
Gas		$89,128.95
Coke (2035.68)		12,976.34
Fittings (838.98)	7,372.92	
Tar (389.95)		629.55
Expense	6,849.03	
228		
Office expense	6,650.55	
Dividend	12,000.00	
Retort house	41,299.33	
Repair	3,199.28	
Cupola	8,390.27	
Purifying	462.20	
Gas coal		1,103.28
Oil		232.44
Cedar Rapids National Bank	1,033.47	
A. T. Averill	1,855.69	
Bills payable		31,000.00
Stock		172,994.16
Bond		75,000.00
J. R. Meader	964.84	
Annex	6,977.56	
Marion	25,808.79	
Parker Russell M. & Mfg. Co	600.00	
Economy Furnace Co		575.00
Cash	267.34	
	$383,639.72	$383,639.72

December 31, 1906.

Gas works depreciation 1905	$10,000.00	
Gas works depreciation 1906	13,000.00	
Gas		95,290.94
Coke		16,399.23
Fitting	5,943.83	
Tar		988.35

Expense	6,849.03	
Office expense	7,795.70	
Dividend	12,000.00	
Retort house	47,719.86	
229		
Repair	3,258.38	
Cupola	9,550.87	
Purifying	480.20	
Gas coal		3,845.46
Oil		972.44
Cedar Rapids National Bank	143.50	
A. T. Averill	1,910.00	
G. M. Averill		200.00
Andrew Kydd		80.00
Bills payable		31,000.00
Bond		75,000.00
Stock	107,442.65	
Annex		529.99
Marion		
J. R. Meader	924.84	
Parker Russel M. & Mfg. Co.		1,262.76
Labor (wages)		1,131.86
Economy Furnace Co.		575.00
Cash	257.17	
	$277,276.03	$227,276.03

EXHIBIT 33.

Plaintiff then produced a book designated as "Record A," Cedar Rapids Gas Light Company and had the same marked "Exhibit 33," and offered the same in evidence, which was received without objection and is as follows:

EXHIBIT 33.

Record "A" Cedar Rapids Gas Light Company (Pages 1 to 6, relate to the organization of the company — are not necessary to the issues in this cause).

230 Page 7. The committee to have articles of incorporation executed and acknowledged, submit the following as the subscription of the original incorporators:

Name.	No. of Shares.	Amount.
Amasa E. Swift	500	$50,000
William H. Whitte	500	50,000
George E. Swift	500	50,000

(Pages 8 to 23 are articles of incorporation, franchise and acceptance with minutes of meetings, adopting the same, and so far as affecting this cause have been set out as an exhibit to plaintiff's petition.)

Page 23. After conferring with W. H. Whitte & Co. about the sale to this company of the charter and franchise of the light to the City of Cedar Rapids with gas, we have agreed to purchase the charter and franchise and present the same to the company without cost or charge; save a credit of 20 per cent. on our stock therein which shall be the full payment for the same.

Resolution January 15, 1872.

(Page 24. Deed conveying charter and franchise; not necessary to be set out herein.)

Page 25. Resolution adopted.

Resolved, That the board of directors of the Cedar Rapids Gas Light Company for and on behalf of said company, does hereby accept the deed of conveyance to the company of the charter and franchise granted to W. H. Whitte & Co. by the City of Cedar Rapids to light said city with gas and direct the secretary to have the same recorded.

Resolved, That the board of directors of the Cedar Rapids
231 Gas Light Company proceed at once to make the necessary arrangements for the erection of a gas works, to be completed and put in operation during the present season.

(Pages 26 to 36 are minutes of meetings and copy of notice of incorporation with proper proof of publication, not necessary to be set out here.)

Warranty Deed.

In consideration of eleven hundred and fifty dollars, we, James C. May and wife, Nancy, hereby sell and convey unto Cedar Rapids Gas Light Co., Lots 1 and 2 in Fr. Block Nine, Original Town of Cedar Rapids (deed contains statutory warranty).

Signed 23rd of February, 1872.

(Duly signed, acknowledged and recorded.)

(Pages 37 to 40 relate to the issuance of $25,000.00, bonds, ordering their issue, providing their form and for their sale. The proceeds to be used in the erection and completion of the gas plant, not necessary to be set out herein.)

January 7, 1873.—Stockholders' Meeting.

Stockholders present.	Shares.	Amount.
A. E. Swift	375	$37,500
W. H. Whitte	375	37,500
Geo. F. Wright	375	37,500
N. O. Swift	375	37,500
Total	1500	$150,000

Page 44. Resolved, That the president of the board of directors and company is authorized to pay any and all debts of the
232 company with the same and to make such sale of them as he may be able to at a price not less than 85 per cent. on the dollar.

Pages 45 to 60 relate to the bonds with copy and are not necessary to be set out herein.)

Pages 61 and 62—Directors' meeting, Nov. 5, 1874.

H. G. Higley elected president; A. E. Swift, vice-president; W. W. Higley, treasurer, and M. A. Higley, secretary.

Page 63—Stockholders' meeting February 9, 1875.

Resolved, That as E. A. Swift, W. H. Whitte and N. O. Swift having sold their stock, and it having been duly assigned, that it now stand on the books of the company as follows: A. T. Averill, 500 shares; Hamer Bishop, 150 shares; H. H. Thomas, 50 shares, and John Thomas, 50 shares.

At a meeting of directors on same date, A. A. Averill was elected vice president; John Thomas, secretary, and the president announced that A. T. Averill and M. A. Higley had been selected to fill vacancies on the executive committee.

OFFICE OF CEDAR RAPIDS GAS LIGHT CO., *Jan.* 4, 1876.

To Board of Directors: I herewith hand you a condensed report of the business of the company from May 1st to December 1st, 1875, to-wit:

Received for gas for May	$940.65
Received for coke, tar, gas fittings	291.16
Received for gas bills, June	734.51
Received for coke, tar, fittings	261.32
Received for gas bills, July	792.55
Received for coke, tar and fittings	238.46
233 Received for gas bills, August	731.54
Received for coke, tar, fittings	267.65
Received for gas bills, September	624.94
Received for coke, tar, fittings	612.95
Received for gas bills, October	1,000.00
Received for coke, tar, fittings	135.00
Received for gas, November	1,368.95
Received for coke, tar and fittings	920.20
Total	$8,920.21

During the same months we paid for coal, labor, materials, May, $1,449.04; June, coal, labor, materials and coupons, $980.84; same for July, $609.50; coal, labor, material, station meter, August, $1,135.86; coal, labor, new mains and r[illegible], September, $1,271.93; coal, labor and new mains, October, $2,[illegible]; coal, labor, materials and coupons, November, $1,372.65, making a total of $8,943.62.

"During the first two months the treasurer was able, by strict economy and hard work, to pay the running expenses, satisfy claims and bills coming due, take up and cancel the April coupons and make a small commencement toward placing the works in repair, and during the balance of the seven months the works have been overhauled, new retorts purchased, leaks in mains hunted out and stopped, new mains extended to the amount of $1,700; also quite a large addition has been made to the list of customers. In fact, a large amount of hard work has been done by the management who have used the utmost economy and done their best to place the plant on a paying basis.

JOHN THOMAS, *Treasurer.*

Page 74. Directors' meeting January 4, 1876. A. T. Averill is elected president; John Thomas, vice president; M. A. Higley, secretary.

234 Page 74. Balance Sheet, January 2, 1877.

Cedar Rapids Gas Light Co.	$150,000.00	
Capital stock account		$150,000.00
Stock account		9,049.65
Bond account		23,000.00
Gas works account	35,261.54	
Office fixtures account	19.14	
Gas account		7,131.80
Fitting account		494.95
Coke account		443.94
Coal tar account		263.64
Lime account		1.25
Expense	4,493.95	
Personal account due company	1,319.13	
Personal account		1,203.84
Unpaid gas bills	376.06	
Profit and loss	112.00	
Cash in office	7.25	
	$191,589.07	$191,589.07

Page 78. Directors' meeting December 12, 1877. Resolved, That the board of directors declare a dividend of 1 per cent. upon the capital stock. Adopted.

Page 81. Profit and loss account, December 31, 1877.

Stock account	$2,487.54	
Expense account	3,220.29	
Dividend account	1,500.00	
Office fixtures, cost bills	179.65	
Gas account		$6,421.22
Coke		743.24

Coal tar		209.50
235		
Lime and fitting		13.52
Total	$7,387.48	$7,387.48

Showing a net profit for the year 1877 of $4,028.64.

JOHN THOMAS, *Secretary.*

Page 84. Directors' meeting January 4, 1878. Resolved, That the price of gas be reduced to $4.00 per M c. f., with 5 per cent. discount if paid on or before 10th of month; that price for setting meters be $3.00, and a dividend of 1 per cent. on the capital stock be declared. Carried.

Page 86. Balance Sheet January 4, 1879.

Cedar Rapids Gas Light Co.	$150,000.00	
Capital stock		$150,000.00
Bonds		20,000.00
Stock account		17,095.63
Gas works and fixtures	39,842.73	
Gas account		7,703.43
Coke		459.79
Tar		291.79
Fittings	2,936.94	
Dividends	1,500.00	
Bills receivable	769.20	
Bills payable		422.87
Gas bills, coal cost	951.09	
	$195,999.96	$195,999.96

Resolved, That a dividend of 1 per cent. on the capital stock be declared, as soon as the funds are in the treasury.

Page 90. Balance Sheet, January 1, 1880.

236

Cedar Rapids Gas Light Co.	$150,000.00	
Capital stock		$150,000.00
Bonds		17,500.00
Stock		43,131.00
Gas works and office	63,757.71	
Gas, coke and tar		8,365.24
Expense	2,641.93	
Dividends	1,500.00	
Bills payable		883.13
Bills receivable and cash	1,990.64	

Page 92. Directors' meetings January 6, 1880. Resolved, That a dividend of 1 per cent. be declared as soon as the funds are in the treasury. Carried.

Page 94. Balance Sheet, January 1, 1881.

Cedar Rapids Gas Light Co.....	$150,000.00	
Capital stock		$150,000.00
Bonds		15,000.00
Stock, Etc.		47,163.15
Gas works	64,633.03	
Gas, coke and tar.....		9,136.44
Fittings and expense	2,564.35	
Dividends	3,000.00	
Bills payable		583.89
Coal, cash, bills	1,686.10	

Page 95. Balance Sheet January 1, 1882.

Cedar Rapids Gas Light Co.....	$150,000.00	
Capital stock		$150,000.00
Bonds		13,500.00
Stock		48,002.44
Gas works, office fixtures.....	65,669.96	
Expense account	1,945.96	
Gas, coke, tar		8,033.59
237		
Fittings		408.78
Dividends	3,000.00	
Bills payable		2,008.58
Coal, cash, bills receivable.....	1,338.38	
	$221,953.39	$221,953.39

Page 98. Directors' meeting. Resolved, That the company issue one hundred bonds of $500 each payable ten years from date. Carried.

Page 101. Stockholders' meeting. Balance Sheet, January 1, 1883.

Cedar Rapids Gas Light Co.....	$150,000.00	
Capital stock		$150,000.00
Bond account		12,000.00
Stock account		51,818.00
Gas works, office fixtures.....	69,652.51	
Expense	1,978.06	
Gas, coke, tar		10,584.24
Dividends	1,500.00	
Bills payable.....		904.59
Bills receivable	1,720.50	
Overdraft	356.34	
	$225,307.41	$225,307.41

Page 102. Balance Sheet, January 1, 1904.

Cedar Rapids Gas Light Co.	$150,000.00	
Capital stock		$150,000.00
Bonds		25,000.00
Stock account		55,963.00
Gas works	92,020.57	
Dividends	6,000.00	
Expense	2,021.76	
238		
Bills receivable and fixtures	2,150.81	
Gas, coke, tar, fittings		14,261.10
Bills payable		7,003.26
Overdraft	5,558.00	
	$252,228.72	$252,228.72

(Pages 103 to 108 are minutes of stockholders' and directors' meetings, electing directors and appointing officers and do not bear on the issues herein.)

Page 109. Stockholders' meeting January 3, 1893.

On motion of A. T. Averill the board of directors were authorized to issue and sell $75,000 bonds with interest at rate of 5 per cent, and to execute mortgage on the plant for same, the bonds to be for 20 years, with option to retire after five years.

Page 113. Directors' meeting January 2, 1894. On motion a dividend of 2 per cent. was declared.

Page 115. Directors' meeting January 15, 1905. On motion a dividend of 2 per cent. was declared, payable to stockholders of record December 14, 1904. Carried.

Page 116. Directors' meeting January 7, 1906. Moved and carried that a dividend of 2 per cent. be declared to stockholders of record December 31, 1905.

Pages 117 to 121 contains the franchise of 1896 and acceptance; same are set out as Exhibit "B" of petition.

Page 122. Directors' meeting July 1, 1906. Moved and carried that a dividend of 2 per cent. be declared to stockholders of record on this date.

Page 123. Directors' meeting January 7, 1887. Moved and carried that a dividend of 3 per cent. be declared. July 7, 1897.
239 Moved and carried a dividend of 3 per cent. be declared.

Page 125. Directors' meeting January 4, 1898. On motion a dividend of 3 per cent. was declared, to be paid to stockholders of record on December 31, 1907, out of earnings of that year.

Pages 126 to 145 show that at directors' meetings, June 30, 1898, and each six months thereafter to January 1, 1907, a 4 per cent. dividend was declared.

Pages 135. Meeting of directors January 1, 1901. Resolved, That $7,000.00 in bonds be issued to cover costs of expenditures.

Page 139. Directors' meeting May 27, 1903. Resolved, That $15,000.00 in bonds be issued to cover part cost of a new holder.

Page 142. Directors' meeting January 3, 1905. Resolved, That on and after April 1, 1905, the price of gas be $1.25 per M c. f.,

with discount of 10 cents per M. c. f. if paid before 10th of the month. Minimum bill to be 50c.

Page 143. Directors' meeting January 2, 1906. On motion officers were authorized to install new condensing, scrubbing and ammonia concentrator.

Testimony of G. M. Averill Continued.

We have something over four miles of high pressure mains from the works to Kenwood Park and the corporate limits and we have customers all along that line. That high pressure line instead of going up to the business part of the city went right out through the residence district, and along the mains where the Fourth, Fifth and Sixth avenues would be in Bever addition so that when it is necessary we can feed those also with the high pressure main. The
240 high pressure main does not parallel any other main except for about five hundred feet on First avenue, all the rest of it is in new territory, and can be used for supplying the patrons of Cedar Rapids. As that section out there is being built up we are supplying gas to individuals from the high pressure main by putting a house governor in each house, and we are supplying them at the present time to private houses.

We have a set of books called the "Consumers' Ledgers" which contain the subdivision of the gas accounts. That is their accounts with the individual consumers, carried into these books in the totals. I think there were seven of those consumers' ledgers used for the year 1906. They are in use at the present time.

The "daily record" book contains a statement of the amount of gas made, first the reading of the station meter which shows the amount of gas made each day, the contents of the holder, which together with the amount of gas made, gives the send-out of gas for each day, the reading of the water gas meter—it gives the amount of water gas taken over and used in the mixed gas each day, the contents of the relief holder, which together with the amount of water gas taken over, gives the amount of the water gas made each day, the number of pounds of fuel, the number of gallons of oil used daily in the making of water gas, the amount of coal gas made each day and the number of pounds of coal used, to make the coal gas each day.

The journal contains the entries that are made at the end of each month taken from the daily record book, taking the number of pounds of coke and coal used to make water gas, *that* figures are taken from the daily record book and are charged to cupola
241 account in the journal. It also shows charges made for coal carbonized each month, the number of pounds being taken from the daily record book of the works.

The cash book contains cash receipts and disbursements of the company and the ledger has accounts that are carried and are made up from the entries in the journal and the cash book. The cash book shows the daily receipts in cash for gas, coke and tar.

Q. There has been reference to an item of $5,627.00. Explain that.

A. That is on the trial balance book. The trial balance book is the book in which we make comparitive estimates or of the amount of business we are doing. This entry of $5,627 was made with instructions to the bookkeeper that when the account, which was not complete, that is, the new purifier account, when that was complete and went into the plant and began operation, that was to be charged to repairs, because there were five pieces of machinery that were discarded. The notation was made there to give him the amount. And it should be taken out of the item "Paid on gas machinery $8,000 and new purifier room $9,427.00" on Exhibit "I" of Exhibit 25. Those two items are for the new machinery which was replaced to repair account. That is we took out and threw away certain old machinery—four old purifying boxes, and their connections, one by-pass and one scrubber and by-pass and they were afterwards sold for scrap-iron. We valued them on the books at $5,627.00 and that is the reason why we changed the amount when they were purchased and were worth that in the business when we took them out, that is, they were doing business up to that time,
but it was crowding them to put the gas through. Previous
242 to the time they were taken out they represented $5,627.00
of capitol, and they were taken out and thrown away and the four big purifiers and the present two scrubbers, were put in their place. The $8,000 of gas machinery contract the ammonia concentrator and the $9,427 is for the new purifying apparatus, the amount of new machinery that the $5,627.00 took the place of was about $6,000. My intention was to take out of the new capital the amount that was represented by the cost of the old apparatus, those were my instructions to the bookkeeper. And in my judgment that was correct; otherwise the books would show that we had double sets of machinery.

Q. There have been some corrections made on the book marked No. 26, the yearly record.

A. For the year 1905 and 1906 the figures for the amount of gas sent out have been corrected, also the leakage, the yearly send out for the years 1905 and 1906. The correction was in June, 1907. The station meter that we put in — August, 1905, had two sets of water line marks on it, that is where the water line should be carried to make its register correctly. We had no means of making a test and so sent to the factory and got a station meter prover, along in the summer and I think we got it in June, 1907. The factory people when they got through with it on some job in Kentucky sent it here. We connected that up with our station meter and passed the gas first through the testing meter and then through our meter and kept making adjustments on our meter until the two dials would register the same. We found our meter had been 4½ per cent fast, that we had not made the gas we thought we had.

I then credited the send-out 4½ per cent for 1906 and 2½
243 per cent for 1905 and then substracted the meter sales from
the credited send-out which gave the leakage, and credited figures with reference to the leakage on that basis. This correction did not in any way effect the amount of gas that was consumed, or

that was shown to have gone through the customers' meters, it simply affected the supposed amount of gas made. If the meter showed that we were making more gas than we actually were, it would simply increase the leakage or unaccounted for gas. The meter sales are made up of the total of the consumption through the customers' meters.

I made no correction on that record with reference to the monthly send-out. I did not change those for that meant scratching the book and correcting it in twenty-four places and the total was what we were after anyway. The meter shows what gas goes into the holder. This record is of what goes out of the holder, which is gotten by measuring the holder; they measure the holder from the water line every morning and from that we compute the contents of the holder. If the holder falls the sendout is greater than the meter record by the amount of the fall, if it raises during the month your send-out is less than the statement of the meter by amount that the holder raises.

With reference to the station meter the water is used to form a seal on the different compartments in the drum. If you lower the water it takes more gas to each revolution of the drum. This water line must be maintained at such a height in the meter that one hundred cubic feet of gas entering will just turn the drum sufficient to register one hundred cubic feet on the dial. A low water line would make your meter slow and a high water line would make
244 your meter fast. With a high water line a small amount of gas would register a larger amount on the dial. When we first put in the meter we were using the high water line, and the purpose of testing was to get the proper water line, the marks had been changed on the meter. There are picked marks on the cast iron usually to show where to set it and they had been pounded out in setting so you could not tell which was the correct line, and we had to establish that for ourselves. We found the meter was fast by the difference in the *h*eading of the two meters when they were set side by side the gas passing first through one and then through the other.

We arrive at the number of lbs. of coal used each day by weighing it as it is taken out of the coal shed. The men weighing it as it is taken out of the coal shed. The men figure out the number of charges they will make of the retorts and determine the amount of coal they are going to use that day for those charges. And that amount the salesman has weighed out and put in the retort. The corrections for temperature are not made each day, we simply take the readings of the meter and the number of pounds of coal to give the apparent daily yield.

On Schedule "B" of Exhibit 25 there is an item of coal account credit balance of $1,941.42; that item on the credit side of the coal account is there because we had taken that amount of coal out of the shed that had not been paid for; if that coal had been paid for and charged to "Coal account," the account would have balanced.

We get our coal shipped in by carload lots, and is paid for, usually the following month after it arrives or sometimes in sixty days.

The coal is charged to the retort house at 25 cents more
245 than the price on the car—which includes unloading, cost and the shrinkage in the weight of coal. Coal freshly mined shrinks in weight and some is stolen. Those charges are made manifestly on the basis of the amount of coal used for that month as shown in the daily record book. That is charged to the retort house but credited to the coal account. We keep the record in the name of "coal account" instead of the firm or person from whom we are buying. On the other side of that coal account the freight bills are charged as they are paid on the coal, and then as the coal is paid for that is charged. On the one side of the coal account we have credits made up of the coal taken out and used in the retort, and on the debit side of that account we have the freight and unloading expenses, and we charge that up at just what we pay for it. We pay seven cents a ton for unloading when it is shoveled out of the car, and when the invoice for the coal is paid, the exact amount of that invoice is charged to coal account. We do not charge coal account with shrinkage, but we charge the retort house the advanced price of 25c additional to the price of coal, this twenty-five cents appears on the extension that carries out the number of tons used and charged to the retort house, that appears as carried out at 25 cents greater than the price of the coal. The fact that there is a credit balance to coal account simply means that our stock of coal is low and we are using it in the retort house as fast, as it comes out of the car. That frequently happens in the winter time. That method of bookkeeping will account for the credit balance to coal account and the same is true of the oil for both years. The charge to retort house is for the exact amount of coal used each year.

I have prepared from the books of the company a schedule
246 showing an operating statement of the plant for the years 1905 and 1906. The statement is marked Exhibit 32 and is made up from the books of the company. It is made up exactly as the books are kept with exception that in the operating statement of 1905 the item of $5,627.00 has been included as it was intended it should be in the manufacture. The actual receipts for the sale of gas in 1905 were $86,701.04. For the month of January 1905 the net price of gas was $1.25 per M. and on consumption of ten thousand feet per month the net price was $1.20, on 20,000 per month $1.15, on 30,000 per month $1.10, on 40,000 per month $1.05, on 50,000 per month the price was $1.00. All gas was billed at $1.35. These prices were in force prior to February 1st, 1905 and in order to get the net price, payment had to be made on or before the tenth of the following month, if it was not paid by the 10th the full rate of $1.35 was collected. On Feb. 1st it was changed to $1.15, net for 1,000 to 20,000.

20,000 $1.10, 40,000 $1.05, 50,000 $1.00. The gross amount for all gas was $1.25, which was collected on failure to pay by the 10th of the month. The exhibit shows the receipts and disbursements and is as follows.

EXHIBIT No. 32.

Operating Statement 1905.

Received for gas	$86,701.04	
Received for coke	16,577.93	
Received for tar	1,285.57	
Total receipts		$104,564.54
Expense mfg.	$55,289.07	
Distribution	6,758.98	
247 Interest and taxes	6,213.54	
Office expenses	6,785.37	
Depreciation	10,000.00	
Total cost		$85,046.96
Surplus		$19,517.58
Received for rent		292.91

Operating Statement 1906.

Received for gas	$95,290.94	
Received for coke	16,399.23	
Received for tar	988.35	
Total receipts		$112,678.52
Expense mfg.	$61,009.31	
Distribution	5,943.83	
Interest and taxes	6,849.03	
Office expense	7,795.70	
Depreciation	13,000.00	
Total cost		$94,597.87
Surplus		$18,080.65
Received from rents		529.99

Exhibit 58.

Comparative Value of Illuminants.

By Photometric Tests.

Electricity at 19 and 9 cents per 1,000 watts. A new 16 c. p. lamp gave 10 c. p. on a consumption of 65 watts per hour making cost 100 c. p. per hour	.1235c
248 Sperm candles at 20 cents per pound. Each candle burned 8 hours at 1 c. p. Cost 100 c. p. per hour	.3125c
Kerosene oil at 13 cents per gallon. Lamp, clean chimney and No. 1 wick gave 9 c. p., burning 5½ oz. of oil in 7 hours. Cost 100 c. p. per hour	.0097c
Gas at $1.15 per 1,000 cu. ft., Welsbach lamp, air hole chimney, consuming 4 ft. gave 100 c. p. Cost 100 c. p. per hour	.0046c

None of these receipts were on account of the Marion plant, it was not in existence at that time. The rent receipts for 1905 amounting to $292.91, were rents from what is commonly known as the annex. The plaintiff had no other income during that year. The cost of manufacture includes the item of $5,627.00. The entry for that item was made by my sale on the trial balance book in December of that year. All of these items in Exhibit 32 are made up from the books of the company.

The plant of plaintiff has been valued by the city for taxation for the year 1907 at $260,200.00, and assuming the city tax to be 10½ mills, and the county 11 mills on the full valuation, it would amount to $5,594.30, and this would be $3,392.00 more than was paid in 1905. The office expense in my statement is taken from the account of that name and is shown on page 171 of Exhibit 28, and amounts to the sum of $6,785.37.

We charged off on the books of the company for 1905 the sum of $10,000.00. The charge was made in the journal which is not now in court. It is also shown in gas works account on page 277 of Exhibit 28. In arriving at the depreciation we figured it on a
249 percentage basis and at the rate of 5 per cent. a year, and the depreciation is figured on the book value of the plant.

Q. Is that based on your experience?

A. My experience is that we have had to rebuild the plant at the end of ten years and the second time at the end of twenty years. The total expense for 1905 including depreciation was $85,046.96. That leaves a surplus over operation of $19,517.58.

The company is authorized to issue $150,000 capital stock by its charter, and that stock had been issued at the time the present management bought the plant. The company paid eight per cent. dividends on its capital stock in 1905, and assuming that the value of the plant at that time was $385,000, that would be .031 per cent.

upon the investment. After the payment of the dividends there was left over as a surplus $7,515.58, which went into extensions and improvements of the plant. It went back into the plant and did not go to the stockholders; it was not distributed.

In this statement for 1905 I have included nothing for gas used at the works and at the office. The gas was metered at those places and included in the meter sales as in the yearly record. There were three consumers' meters in the works that registered the amount of gas used at the works, and we keep a page in the consumers' ledgers for each of these meters, and the same is true of the office.

I have figured up the amount of gas that was used in the works and in the office for the year 1905, which was at the office 53,600 cubic feet, and at the works 946,100 cubic feet. This is included in the total of gas metered for that year of 77,782,300. The
250 total gas metered was 77,782,300 c. f. Of that amount 999,700 c. f. was used by the company and not paid for, so that the amount received for gas of $86,701.04, is amount received upon the sale of 76,782,600 c. f. In Exhibit D of Exhibit 25, there is an item in the manufacturing expense of $1.088 for gas used at the works. If we exclude that it makes the total manufacturing cost $29,577.77. And if we exclude the price received for gas at the works, we also exclude the gas that was used at the works, so the total sales would be 76,782,600 c. f.; that would be the divisor instead of 77,782,300; that makes the manufacturing cost $38.06c. In Exhibit D, there is also an item of office rent and light. The office rent, as I find it in the books is $780.00, and lights is $61.64. Excluding that $61.64 and it would make the figures in the percentage column .1179c. instead of .118c. In 1906, the company used 1,132,900 feet of gas at the works and office, and this taken from the 92,306,100 cubic feet of metered gas, would leave the actual sales 91,173,200. The cost to manufacture was $38,391.90, and take from this the gas included as used at the works by Kellogg would make the cost of the gas actually sold .4009c. The statement of the operating expenses for 1906 are also included in Exhibit 32. The total amount the company received for gas in 1906 was $95,290.94, from coke $16,399.23, tar $988.35, making total receipts for sale of gas and by-products of $112,678.52, and $529.99 from rent of annex. These are all the items of income that the company had for the year 1906. The operating expenses were cost of manufacture, which included all the works account for 1906, amounted to $61,009.31. Those items are shown in the balance sheet December 31, 1906. The expense of manufacturing includes the retort house account of $9,-
550.87 and purifying account $480.20, the repair account of
251 $3,258.38. The distribution includes the fittings and amounts to $5,943.83. Interest and taxes shown in expense account amount to $6,849.03, and office expense $7,795.70. On page 119 of the ledger is the list of the several items of charges that make up office expense for 1906. There is a charge for depreciation for 1906 amounting to $13,000. That $13,000 went into the plant, into renewals, repairs and extensions, and the ten thousand charged off in 1905 also went into the plant—it had gone into the plant be-

fore it was charged off. The company paid 8 per cent. dividends on the capital stock in 1906, amounting to $12,000, which left a surplus after paying dividends of $6,080.65. That surplus was in the plant and none of it was distributed to the stockholders.

(Plaintiff offers in evidence Exhibit No. 32.)

At the present time there are $75,000.00 of bonds outstanding against the company and a floating debt of $6,000.00 about. There was a floating debt January 1, 1907, of $31,000.00, of which the plant at Marion stands $25,947.60. All of which is shown by the balance sheet of December 31, 1906.

The sum of the consumption in Marion and Kenwood Park for the year 1906 as shown by the consumers' meters, was 1,473,200 c. f.

Q. What method should be used in determining the amount that the Marion plant should be charged for the manufacture of gas?

A. Marion should pay the holder cost, plus the percentage of depreciation on the works and a proportionate part of the expense of compressing the gas, a porportioned part of the repairs and interest on that part of the line between the works and the
252 city limits. About half the gas that goes through the compressors is used in Cedar Rapids, so that half of the cost of compression should be charged to Cedar Rapids. I have estimated that Marion plant should pay between 43c. and 45c. per thousand for the gas that is consumed in Marion; that is what I figured it costs us to put it into the high pressure line, including interest and depreciation. That is to put it to the city limits.

The amount of money that has gone into the plaintiff's plant, according to the books of the company, and excluding Marion, is $365,000 up to January 1, 1907.

The present management secured control of the plant in 1874 or 1875. On the 2nd day of January, 1877, the gas works account, which is the plant account, stood $35,261.54. That was about two years after the present management bought. That item purports to represent the amount that it has cost these people at the time that they bought it or just a little after, and there were $23,000 bonds against it at that time. When they bought it they bought it subject to a mortgage of $25,000.00. The record shows that the plant cost the present management $35,261.54 in addition to the mortgage which they assumed of $25,000.00, making a total of $60,261.54. There was added to the plant the next year, according to the books, $4,566.98. In 1883 the gas works account was $63,721.78, which shows that $24,893.25 went into the plant during that year; in 1881 it increased about $879.11, and in 1884 gas works account was $92,020.57. There is no ledger account from then until 1897. When the present ledger starts. The balance sheet where the present ledger starts was taken I suppose from the old ledger. On January 1, 1897, gas account stood, $132,775.12; 1898, $140,949.01;
1899, $148,612.09; 1900, $145,213.99. It was less in 1900
253 than in 1899 for there was $7,500.00 depreciation charged off that year. 1901 the account stood $154,803.82; 1902 it stood $169,134.62; 1903, $169,100.00; 1904, $204,116.78; 1905, $214,514.34; 1906, $229,093.52; December 31, 1906, $236,960.05.

This account represents the plant, the money that has gone into it after depreciation was taken out, and $50,000 of that money has been raised by the sale of bonds, over and above what the bonds were when we purchased the plant. The bonds bear 5 per cent. interest; the floating debt 6 per cent.

What income, in your judgment, should the capital that is represented by the bonds earn?

A. The capital that is represented by the bonds should earn something for the risk that the stockholder carries, and that the bondholder does not carry, and in my judgment it ought to be equal to the bond interest—in this case about 5 per cent. Assuming that the value of the plant is $375,000, that $75,000 of this value is represented by bonds and $300,000 by capital of the stockholders in a manufacturing enterprise such as this a fair return on the total capital seems to me would be about 10 per cent. The fact that money can be borrowed on bonds from people who are not willing to have the risk of investment, can be borrowed for less than 10 per cent. is a fact the stockholders of the concern should be allowed to take advantage of, if they so desire, instead of putting their own money into the plant. I think the entire capital invested in the plant should earn a fair rate of dividend, and if money can be borrowed for less than that, that should go to the benefit of the people, who have to underwrite the bonds and take the risk. If $75,000.00 of the capital is represented by 5 per cent. bonds, in my judg-
254 ment, that capital should earn the 5 per cent. interest on the bonds and the risk that the bondholders do not take, which would be an additional 5 per cent.

I believe it is necessary to give a discount for prompt payment. If the ordinance does not provide for a discount, or does not provide for a penalty for failure to pay on the 10th of the month, we will in my judgment, have to provide a discount or very materially increase office expenses of collecting the bills. I could not say how much until we tried. When I used to collect the bills, we had about five hundred meters and it took me about all that I could do to collect the 500 bills. There are now 4,000 bills; that would take eight collectors, instead of one, and eight collectors at $50.00 a month would be approximately 4c. per M. c. f. There was a time when, while we gave a discount, we went around to collect the bill. We would have also to increase our working capital, because we would be longer in getting our money back; our payments would not come in until they had to, or until we shut off the gas. Then there would be a heavy loss in the way of bad debts. They would not have the incentive to come in before the 10th of the month and save the discount, and instead of losing forty days' gas, we would lose two months, because it would be the end of the month before we got to the people who did not pay.

It would be almost impossible to adopt a rule for shutting off the gas on the 10th of the month, or to do that to any great extent, and we would not have men and wagons enough to shut off 4,000 meters if they did not pay. The shutting off of the gas is never charged to the consumer. The company would be at war with their con-

sumers all the time, and even now the shutting off of a
255 consumers' meter always causes more or less unpleasantness.

I know when the ordinance fixing this rate was passed. Prior to that the company offered to give the members of the council an opportunity to investigate the books to see what the cost of gas was. The committe accepted the offer and made arrangement for a meeting, naming the hour and then never came. The members of the council or committee never investigated the books of the company before passing the ordinance.

Q. Was the company given an opportunity to appear before the council to show whether or not this ordinance fixing rates at 90c. would be unreasonable?

A. We knew nothing whatever about it, until the ordinance had been passed to its final reading. The first I heard of it, somebody telephoned me late at night from the city hall that it had passed the third reading.

Exhibit 34 is a map of the mains of plaintiff's plant; the red lines are the high pressure mains and the blue lines are the low pressure system. "Exhibit A" of the amendment to the petition was copied from the record of mains and is correct, and gives sizes of mains, whether cast or wrought iron, and when laid. The books of the company have been kept under my direction since 1888. They are not in my hand writing, but in the hand writing of Mr. Kydd, and I believe he is in Texas at the present time. I know the books have been correctly kept and are correct.

The corporation record is a book that was handed down to the present owners by the incorporators and it purports to be a record
of the corporation and so far as I know it was correctly kept.
256 The entries since 1888 were made by me and are correct.

Exhibits 35 to 43 are the consumers' ledgers of the company, and contain the individual gas accounts; each sheet represents a meter and consumer, and are perpetual so far as the ledger is concerned, when one page is full we take it out and put in another, when the consumer's account is closed. The sheet is taken out as soon as the meter is taken out—these pages follow the meter. If the account is paid up in full it is not preserved, if it is paid it goes into the Transfer Ledger. These consumers' accounts show residence, consumer's name, his meter, the readings of the meter, the amount of gas he has used each month and the amount that he pays each month and date of payment. These books do not show the complete accounts of 1905 and 1906 because any person who was a consumer in 1905 and is not now will not be found in the book. When the meter is taken out the page is taken out and they are thrown away if the consumer has paid his bill. These are known as loose leaf ledgers—the leaf can be lifted out by unlocking the book. When a page gets full we take it out and put in another, and do not preserve the old sheet if the account has been paid up.

I stated this morning that the company has a sliding scale of prices and with 50,000 feet consumption a month the price was $1.00 There is a further discount and on the consumption of 300,000 feet per month the net price is 95c. and on consumption of 500,000

per month the net price will be 90c. No one of the consumers got the 90c. rate in 1906, but the American Cereal Company got the 90c. rate for two or three months in 1907, but in order to get
257 that rate they put in an exhauster of their own and a tank and pumped the gas from our mains, so we could deliver the gas through a small main. They come for the gas instead of us having to deliver it to them. The ordinary consumer uses 2,000 feet a month and it would take 500 consumers to use as much gas as the one consumer would use through one meter and one service, the 500 consumers you have a good many blocks of mains and 500 meters to read and services to look after and there would be some loss in the way of bad debts. You would have just 500 times the work. They use the gas in the day time and for fuel purposes entirely and the gas used in the residences is largely evening consumption. I think we have more than 500 consumers who use less than 1,000 c. f. a month, that would be about 12 per cent. of our customers who use less than 1,000 c. f. per month.

I have heard insinuations during this trial to the effect that the company furnishes gas to customers and the officers put the money down their pockets; there is no such thing practiced by the company and never has been, during the time I have been with the company.

Cross-examination:

The account of the American Cereal Company should be in the ledger for "A" avenue, that is Exhibit 42. The sheet will show when the meter was put in which was in 1905, I suppose the meter readings for 1905 are on the original sheet put in 1905, I don't know where the original sheet is or what has become of it. It was originally in the book. I don't know where the readings are from January 1st to August 1st 1907.

When the interrogatories were answered by the president
258 of the company I assisted in examining the books and the presentation of the answers. The American Cereal Company were consuming very little gas in 1905. They were very small consumers. They used some gas in 1906 but I don't think as much as $500.00 a month. I didn't take out the leaf of that company from the consumers' ledger and I don't know who did. I don't keep those books and I don't know when they change leaves. A leaf could disappear from the consumers' ledger of one of the largest customers and I not know it if there was another put in.

The consumers' ledger is the only record we have of the consumers and the only way we can ascertain who is getting gas. I don't remember the amount of the receipts we issued to the Cereal Company. We issued receipts for what ever amount they used and paid for. When we were asked to give the names of the largest consumers in 1905 and 1906 the name of the American Cereal Company was not given; they were not one of the largest consumers in 1906 they were small consumers. The loose leaf ledger is so prepared that each line represents a meter-reading and there are 27 lines on a page and two pages to a sheet, and a page if it does not get

soiled or torn should last four years. The meter was installed in Oct. 1905, it could not have been filled by Sept. 1907, but I do not know what became of the sheet and have no explanation to offer about it.

The record called "Record A" is a record of the articles of incorporation and of the proceedings of the gas company down to the present time.

Q. The first purchase of stock in the company by Mr. A. T. Averill was about Feb. 9th, 1875.

259 A. I don't remember the date, the books ought to show it. He probably bought the year previous to that in which he appears a stock holder.

Q. Defendants now read from the book the following: Stock list, A. E. Swift 500 shares, R. H. Whitta 500 shares, Geo. F. Wright 500 shares. Resolved that the capital stock of this company be distributed giving N. O. Swift enough from each of the present stockholder's stock herein to make him an equal shareholder with each of them in said company and said stock when so distributed to stand and be owned as follows. A. E. Swift 375 shares, W. H. Whitta 375 shares, Geo. Wright 275 shares. Resolved that whereas A. E. Swift, R. H. Whitta and N. O. Swift have sold their entire stock of 750 shares of stock in the company to A. T. Averill, Mr. Bishop, R. H. Thomas and John Thomas, the stock shall stand as follows: A. T. Averill 500 shares, Homer Bishop 150 shares, R. H. Thomas 50 shares, John Thomas 50 shares. Dated Feb. 9th, 1875. The plant was rebuilt in 1883, I don't know whether the company issued any new stock or borrowed any money. I was just home from school in the summer and worked as a workman about the works. I had nothing to do with the office. I don't know where in the books is a record of that rebuilding. I do not know where the book is. There was a ledger previous to this one, one we had used at the works and when I left the company to go into the grocery business the office was at the works, while I was in the grocery business the office was moved up town, and the old books were left down there in the office and weren't used for a time, the office was cleaned out afterward and what become of the old books I do not know. I havn't seen the old ledger since I left to go into the grocery business. Mr. Kydd

260 made the entries in the present ledger Exhibit No. 28. I was secretary and manager of the company. The contents of the old ledger so far as additions to the plant and putting money into it was transferred to the new ledger. The balances were undoubtedly carried from the old ledger to the new. The balances on which this ledger was started were taken from the old ledger.

I think that the entries were carried down from the old books and transferred to the present set and from the time that Exhibit 28 was commenced it contained all of the record itself in regard to additions and such as that.

Q. The fact is Mr. Averill isn't it that this plant outside of the borrowing of the $25,000 for which there was a mortgage given running first to Mr. Gage as trustee, and the issuing of a new mort-

gage, has been out of the earnings of the plant, after paying operating expenses.

A. With the exception of $50,000 contained in the present bond issue. The way I understand it, is, the bonds now are $75,000 and $25,000 of that was in existance at the time of the purchase.

Q. So far as the stock holders are concerned there has never been anything put into this plant, except that additions have been added from time to time up to the present over and above operating expenses, repairs and renewals, aside from the $50,000.00.

A. That is all, most of the profits of the business have been put back into the plant, but they have paid annual dividends aside from that, on the basis of the capital of $150,000. We paid a certain per cent on the capital. The bond interest have always been paid.

261 Q. Then the fact is that the entire plant as it now stands, excluding the Marion addition, was constructed of the profits from year to year, with the exception of $50,000.00 borrowed money which still stands against it.

A. Yes sir.

Q. And aside from building itself up to its present condition it has paid salaries to officers and annual dividends of eight per cent.

A. For the last six or seven years, it has paid eight per cent since 1900. It was eight per cent in 1899. I think it paid small dividends up to 1899. In 1897 it paid 6 per cent. In directors' meeting January 6th, 1880 I find the following: "Resolved that the treasurer be authorized to declare a dividend of one per cent on the capital stock as soon as funds are in the treasury. In the balance sheet of January 1st, 1881, there is an item charged to dividend account of $3,000.00. In the balance sheet of January 1882 is a charge of $3,000 to dividends. For 1883 there was 1 per cent. In 1884 4 per cent, I don't find any dividends from that time on. The next one is for 1904, 2 per cent. There is a period from 1884 to 1904 that I don't find any record of dividends having been paid. There was a dividend I think in 1891 and 1892 of one per cent. The first dividend I ever got from the company was one per cent in 1891 as to the years prior to that, I wasn't here and don't remember, after that I got a dividend each year. We commenced to rebuild the plant in 1903 and the books show what additions and extensions have been made since that time. Each year we have kept an account with each piece of apparatus that we constructed at the works until

262 it was completed and then carried it into the plant account, that is any large piece of apparatus. We kept no construction account, but the account was carried under the name of the special things that we constructed. Everything that went into the new holder in 1903 was charged to that holder and the same was true of all the large items, not the small items, the mains in the various parts of the town, were charged to the plant account as they were made. There is a certain part of the original pipe that I mentioned this morning that is still being used. I know it is inadequate from the trouble we have to keep them in service, but as to the condition of the pipe from deterioration, I do not know. Since the Averill management we have kept a map of the mains showing the mains, the

size and whether they are cast iron or wrought iron, and the location of the mains. The annex was purchased November 1908, at a cost of $6,500.00. We bought it with the view of erecting a holder on it, but it has not been used for the manufacturing and distributing of gas in any form up to the present time, only for storing pipe on it temporarily or something like that. The houses are rented, but there is an inside space and we have pipe piled there and left it there until we were ready to use it. The items of $292.00 for 1905 and $529.99 for 1906 was the net income from the rentals over and above the repairs.

In Exhibit No. 32, I have included in the cost of manufacturing gas the taxes on the annex.

We have a switch track from the Milwaukee railway into the works, but coal only is shipped in car load lots, would be shipped into the yards. We can't unload pipe in there for we have no room to unload it, our switch is between the tracks of the Milwaukee and the side of the building against the coal shed, and you can't
263 get a wagon through between either of our switch tracks. Cars can be put in there from other roads by paying switching charges of $2.00 a car. I don't think we have any pipe stored on the annex now.

I said we had 4½ miles of high pressure mains on the east side and between two and three miles on the west side. They were both put in in the summer of 1906, the four inch being put in first and the three inch got into service along about Thanksgiving time. They were put in for the purpose of increasing the pressure in the system. It was supposed when they were put in, that they would render the system adequate for sometime to come in the way of pressure. It was the only supply we had for time check, we had just opened that up.

Q. It is something that can be adopted wherever there is insufficient pressure that is what we used the west side for, but it is not sufficient. I am sorry to say that we have found that it does not fully relieve the lack of pressure. We expended a good deal of money in 1906 on the mains for that purpose. We spent between $10,000.00 and $11,000.00 on mains in 1906, but the amount that went into high pressure I cannot state, but it was several thousand dollars. The east side high pressure line was sent up to Central Park for the purpose of helping the inefficiency there but it was not effective for the purpose and we will have to have more, it may carry us through this winter. The entire lack of pressure can be overcome in this system by the high pressure mains, if there is enough of them. Where there is inefficient pressure, it can be relieved by introducing high pressure if you introduce it in every block. If we connected
in every block on low pressure mains it would probably help
264 it out, but it is a question if the high pressure will take care of the inefficiency or whether we will have to put in new mains.

(Plaintiff offers in evidence Exhibit No. 46, which is not objected to by defendants.)

I have the tax receipts for 1905 and 1906, and they show the valuation of the annex; the amount is in one total. The valuation on the annex for 1905 was $2,060.00 for county and the full valuation for the city was $8,000.00 for 1906, the assessed valuation is $2,183.00. These taxes on the annex were paid along with the company's other taxes and were included in expense.

We had an extension of our franchise in 1896. The acceptance of the franchise is in the records of the company and is in the following words:

"The Cedar Rapids Gas Light Co. hereby accepts the conditions of ordinance granting the renewals of the franchise and privilege of furnishing gas to the city of Cedar Rapids and inhabitants thereof and such acceptance is filed with the recorder in pursuance of the requirements of said ordinance being a renewal of ordinance No. 112 passed Nov. 17th, 1871. In witness whereof the commpany has caused this acceptance to be signed by its president and secretary this 2nd day of June, 1896.

CEDAR RAPIDS GAS LIGHT CO.,
By A. T. AVERILL, *Its President.*
GLENN M. AVERILL, *Secretary.*"

The only change that I know of being made in the books of the company since this suit began was in the yearly statement of record of the amount of gas manufactured and leakage. It oc-
265 curred to us that the meter at the works should be tested before the rate ordinance was passed, but were unable to get the meter prover; we have made an effort to get the prover. At the time of the passage of the ordinance the book showed something like 88,000,000 cubic feet for 1905 and I corrected that year 2½ per cent. I don't remember of Mr. Hall and Mr. Gillespie calling my attention to the change of the figures on the record book. They did not ask me what the change was for and I did not say it was on account of a change of temperature. I remember talking to them about temperature, but I don't remember talking to them about that change. I don't remember of doing so. Never to my knowledge did I talk to them about that change. As I remember, this book, Exhibit No. 32 was given to them after they had made a demand on us and asked if there were any more books in our possession that the accountants had not seen. At the time this ordinance in controversy was passed there was a notation on the trial balance of the item $5,627.00 for the entry of that item to renewals and repairs. It has never been made however. That notation was there prior to October 1906, and it was there at the time the ordinance was passed. I put it there and it is in my hand writing.

In order to make up the statement showing the cost of gas I have included that item of $5,627.00 to renewals and repairs as we intended it should be and it does increase the cost of gas. In estimating the cost of gas at the holder I have included interest on bonds and interest on floating debt which is included in expense

account. The station meter was 4½ per cent fast for the first half of the year 1907, but I have not made the correction on the record yet. I will do that at the end of the year. The
266 yearly report for 1907 has not been made up yet. I have the ledger showing the gas consumed at the works. The readings commence October 26, 1905, and comes down to date. In my calculation in estimating the cost of manufacturing gas I have made no charge for the gas consumed at the works. I believe the gas used at the works is charged in Mr. Kellogg's audit at $1.00 a thousand cubic feet.

The item of $8,000.00 in 1906 was for scrubbing and condensing apparatus and the ammonia concentrator, it was no part of the purifying room or apparatus. The purifiers were installed in 1905 at substantially $9,427, though there were some bills out that were charged to gas works after the purifier account was thrown into gas works account.

The stock-book shows the out-standing stock and the names that it stands in. The stock-book shows certificates No. 8 and 20 issued to John Thomas and are still out, it is for 50 shares of $100.00 a share. John Thomas had $10,000.00 of the $150,000.00 and the balance of the stock is owned and held by Mr. A. T. Averill and G. M. Averill, myself.

I understand the condition with reference to this 90c. ordinance to be that, the company might make such rules and regulations as it pleases in respect to the collection of the bills except that it cannot ask any price above 90c. I don't believe we could require a deposit in advance in all cases—we do require guarantees in certain instances where persons using the gas are doubtful pay, we require a reference or guarantee and where it is for a company we ask for the names of the officers of the company.

We have never put in force a rule requiring a minimum
267 deposit from each customer each month. We have tried the plan of asking for deposits from doubtful persons, but have not always receive them.

Q. You never tried the system of leaving your bills at a store or place of that kind in different parts of the city for collection.

A. No, sir. We have made the collections by sending collectors around, and by the present system, these are the only two methods that we have tried. When our office was at the works we offered a discount in addition to going after the money, after we had been up town a year or so, we made a reduction in the price and the discount if they came to the office and paid within ten days. That was not the only time the company voluntarily reduced the price of gas, we volun-arily reduced it in 1905, the rates were changed and a reduction was to take place in April, 1905, and at the request of members of the council we put the new rate in effect February 1st, instead of April 1st, 1905. The reduction was voluntarily made, there was no request or demand by the council in regard to lower rates, that I remember of. I remember a Mr. Fuertardo who was here during the Huston administration. He made a report to the city council; we were not furnished with a copy of the report.

I suppose we could have gotten it if we had asked. I did not know that the question of the price of gas was under consideration at that time or that there were complaints that our rates were high.

Q. During all the years that you have been connected with the company there were no complaints about rates?

A. No, sir.

268 Q. Up to the expiration of the franchise there was a contract between the company and the city.

A. There was a price named in the ordinance. The question of the reduction of the price of gas has not been a matter of public discussion in the papers and before the council before the passage of he 90c. ordinance, and I never knew anything about it until just about the time of the passage of the ordinance, when we met the committee of the council and we never had a conference with the committee of the council as to the lowering of the price of gas. We never had a request from the council as to reduction in the price. That has always been voluntarily made.

Mr. Connor became mayor in the spring of 1906. I did not know that the price of gas was one of the things mentioned in his inaugural message. I never saw it, and never say any proceedings of the council that looked toward the reduction of the price of gas. We did as I remember, ask for a copy of the report of Fuertardo and were refused it. I have seen an extract from it in the newspaper. The paper I had didn't have the full proceedings of the council. I suppose the daily papers publish the proceedings of the council.

Q. As secretary of public service corporation acting under municipal grant, you keep track of what the council does in respect to your business.

A. I never bother the council about it and never paid much attention to it.

Q. When you said the council made no investigation of the cost of manufacturing and distributing of gas you didn't know anything about it.

269 A. They didn't investigate our business, our business has not been investigated. The report, if any such was made had nothing to do with our plant. We asked for a copy of the report after we knew that one had been filed but I didn't know the council was investigating the question of rates. I knew the report was made by Fuertardo in respect to gas and gas lighting and an examination of gas in the city. As to what information the council acquires from this report and other sources I don't know, only what they told me. I don't know what information was passed by the city council at the time they passed the ordinance only what the chairman Mr. Campbell told me.

The defendants offer in evidence the following from the maugural address of Mayor Connor March 12, 1906, "Light and Heat Rates: The regulation of rates for commercial heating, light and power should receive our early attention, it should be approached in a spirit of fairness and conciliation, without passion or prejudice, the end sought being to attain for Cedar Rapids rates as low as any other city under the same conditions."

Objected to by *defendant* as being incompetent, irrelevant and immaterial, there being no foundation laid for it and it is hearsay; taken subject to objection.

In estimating the cost of gas to the burner I have included interest on bonds and interest on the floating debt.

I have the record that shows the gas consumed at the works, the reading began in 1903, and came down to the present time. In my statement of the cost of gas I have made no charge for gas used at the works.

270 The item of $8,000 has not been carried into cost of manufacturing gas in my Ex. No. 32. That item was for new scrubbing and condensing apparatus and the main concentrator they were installed in the spring of 1906. The scrubbing and condensing apparatus cost $8,000. The purifiers were installed in 1905, and the total cost is included in the item under April 3rd, new purifying room $9,427.03, that is substantially the total. I think there were some bills unpaid that were charged to gas works, after that account was thrown into gas works I have the consumers' ledger that has the account of the Cedar Rapids Nat'l Bank, the meter was put in October 1903, and the leaf was changed July 30th, 1907. I don't believe we have the leaf that precedes this. The leaf of T. M. Sinclair Co. was changed July 26th, 1907, their meter was installed in July 1903, they simply used Gas for laboratory purposes it shows only a minimum amount the highest it has ever been was three dollars per month.

We have no meter installed at the Pawnee Mills they never have used gas at all. We have the main laid over there but no connection has been made.

I paid no attention to it. Our affairs had not been investigated before January 1906, the report purports to have been made by a gas engineer but not of our business. It does not contain the cost of gas manufactured at our plant. He never investigated our plant. I knew there was a report made in regard to gas light and the consumption of gas—but never knew the council was investigating the question. I don't know anything about any information the committee acquired when they passed this ordinance and the source of their information.

271 We had all the machinery for which the $8,000 item was charged in 1906, and when the charge was made, we had all that, that $8,000 was paid for. It included the ammonia concentrator but none of the water gas machinery—I have included the high-pressure line to the city limits: the Marion line, we have consumers who are supplied from that main in Cedar Rapids. All the consumers from Twentieth to Kenwood Park are on the high pressure main.

The main was put to Marion the same year that the high pressure mains were put in down here, none of the high pressure mains are laid under the pavement on First avenue. The high pressure main is on Tenth avenue, Fourth avenue and Second avenue and out beyond the paving it comes on First avenue. Between the works and Second street and around Oak Hill way it supplies some customers

and it reinforces the pressure in Central Park and their is a Governor at Twentieth street which allows the gas from the high pressure mains to feed into the system.

The only way we can tell as to the gas that passes through the high pressure mains is by the speed of the compressor. We count the revolutions of the compressor on the Marion line and C. R. line, which is governed by the pressure on the high pressure mains—the east side and west side are independent lines, and this is the only way over the lines and counting the consumers on them. In making up this account we have to apportion just what part of the expense of carrying gas to Marion we think is proper and the balance of the high pressure expense goes into the city lines. That part of the cost of the Marion line from Twentieth street to the City limits is charged to the Cedar Rapids.

I believe we should charge up as a part of the Cedar Rapids
272 investment the cost of the Marion high pressure main to the city limits because it is included in the system of mains that supplies the Cedar Rapids people, and also supplies Kenwood Park and Marion. It isn't very far from Twentieth street to Kenwood. All the account on page 422 of Ex. 28, included everything that went into the Marion plant, mains, services and included all the high pressure mains only from the limits of Cedar Rapids, from Twentieth street to the city limits is included in gas works account, and the items of that account were made up as the invoices for pipe were paid and up to the city limits were charged to Cedar Rapids. Page 422 of Ex. 28 contains none of the system of high pressure mains except that part of it that is for consumers at the city limits—it is wholly beyond the city limits and in the city of Marion. Marion account only includes what is outside of Cedar Rapids, the account showing cost of high pressure mains to the city limits is in Gas Works account on pages 276, 277 of Ex. 28.

They were put in there in small items—the pay rolls of the men etc., it goes into that account in small items as it was paid out. I couldn't find the high pressure items in one lump—I couldn't tell what portion would be for the pipe but it would be in small items, small lots I couldn't tell by referring to the cash book—we bought the pipe of the Iowa Wind Mill and Pump Co. and I couldn't tell without referring to the bills because we bought other stuff of them besides pipe, the distribution charged to the respective accounts. I think we have the bills if they have been returned to us—they were in the bill files. I don't know whether the books show that this is the 3rd system of machinery installed or not, but this is the 3rd system at the present time. The items of the different kinds
273 of machinery are not named in the gas account—what we have kept is a separate account of each thing we have installed recently.

In 1903 and 1904 is about the time I said it was practically rebuilt. I think I can tell you what was put in each year without the books. In 1903 was the holder No. 3, and in 1903 there was the Exhausters and a lot of that work in the engine room—engine and all connections between that and the apparatus so that the new holder could

be used. I think all that went to the Gas Works accounts, there was an account kept for the holder that year. The next year, 1904, we extended the purifying house and I think there was an account called New Purifying House. Also there was a new coal shed built in 1904—a steel shed. 1905 the purifying building and apparatus was installed. I think the account was not closed in that year for it had not been entirely paid for. The new station meter in this connection.—In 1906 the gas machinery, which is the scrubbing and condensing apparatus was installed including the ammonia concentrator. We kept an account with the holder until it was all completed and then it was thrown into the Gas Account. I don't know whether there was one kept with the coal shed or not, but there was one kept with the new Retort House and after the retort house was completed it was thrown as a whole into gas house. Then there was the new purifying house—that was carried until most of the bills were paid and carried onto the books. I know it was carried over into the year after it was installed and then thrown into the plant account and afterward there were a few bills paid that should have been in that account but it had already been thrown into plant account, those items were charged direct account. After
274 the work was completed they were all carried into Gas Works account.

Q. Is there anyway of telling from your books what persons are consumers on the Marion high pressure line inside the city limits.

A. By following the names of the consumers we have on the streets that that main is on would give the consumers off that main. All the consumers from 20th street to Kenwood Park are on that main. The high pressure main starting from the works, first runs up 10th avenue, then over to 4th, then on 4th, then on 2nd and out beyond the paving it is laid on First avenue. It strikes First avenue between the Douglas property and the old Simpson property. At 20th street there is a governor and the high pressure pipe as far as that part of the city is concerned does add to the pressure—does feed into it at 20th street. There are private consumers on that high pressure main and the quickest way to ascertain the number would be to follow the main and count the houses through. I think it would be possible to pick them out from the consumers' ledger. They are not in a separate book because the books do not follow the line of the mains. You can tell from the speed of the compressor as to the amount of gas that goes through this high pressure main and is used in Marion. We count the revolutions of the compressor on the Marion line and the Cedar Rapids line. The east side and west side are independent lines. We can shut off any one of the west side supplies of high pressure and take the speed of the compressor when it is supplying Marion only. The speed of the compressor is taken with a speed indicator.

275 Q. There is no record kept by which you can tell what portion of that expense should be borne, except approximately, is there to the Marion people.

A. Yes sir. The balance of the high pressure gas goes over the west side line.

Q. You charged up as a part of the investment the cost of the main from 20th street to the city limits.

A. That is included in the system of mains that supplies the Cedar Rapids people; it also supplies Kenwood and Marion. It is not very far from 20th street to Kenwood Park. The cost of all the mains commencing at 20th street appeared on the books, prior to the commencement of this suit charged to the Marion system. All fittings and the mains from the Cedar Rapids city limits are charged to Marion. Commencing at 20th street and counting to the city limits is in the Cedar Rapids gas works account. These items were made up as the invoices for pipe were paid for and to the city limits was charged to Cedar Rapids. The Marion account only included what is out side of Cedar Rapids. I can't find the high pressure items in one lump in the books.

I don't know whether the books show it or not, but the present is the third set of machinery that has been installed at the works. What we have installed recently we have kept a separate account of, I don't know whether that was done in the early days or not.

The new plant was built as follows: In 1903 new holder, exhausters and a lot of the work in the engine room, the new engine and all connections between that and the apparatus so that the new holder could be used. I think that all went into the gas
276 account. There was an account kept for the holder that year. 1904 we extended the purifying house, also built a new steel coal shed. In 1905 the purifying building and apparatus were installed, also new station meter. I think that account was not closed that year for it had not been entirely paid. In 1906 gas machinery, scrubbing and condensing apparatus were installed, including ammonia concentrator.

Q. You. I ask you if the following additions to the works have been made, between 1902 and 1906 and paid for. Mains installed in 1902, $9,948.00; 1903 mains installed to the value of $1,026.10; also holder No. 3 at a cost of $45,190.68; 1904 mains, $6,847.33, and retort house and equipment at a cost of $5,550.75; 1905 mains installed at a cost of $14,590.56, and purifying house and equipment $9,427.00, built and paid for during the two years 1905 and 1906; during 1906 a condensing and scrubbing apparatus $8,000.00, and boiler $1,576.60; building $1,254.46, and mains laid at a cost of $10,610.45.

A. That includes all except the Marion plant. These are the items I referred to when I said the property had been practically rebuilt since 1903; these items state everything except the old water gas set.

Q. All these items were paid for out of the earnings of the gas company aside from paying a dividend of 8 per cent. on the capital stock.

A. And the bills payable, over and above the Marion plant, they are about $6,000.00. We took none of the earnings of the Cedar Rapids plant and put it into the Marion plant. The Marion and Kenwood lines were paid for by the plaintiff by borrowed money. We increased our bond issue $15,000.00 in 1903, and that was put into

these things we have just read, in the Cedar Rapids plant.
277 The cost of the high pressure main to the city limits was included in the amount $10,610.45 for mains laid in Cedar Rapids in the year 1906.

Q. The plant was able to pay for all these items and still pay a dividend of 8 per cent. and interest on its indebtedness.

A. Yes, sir, with the $15,000.00 of bonds and $6,000.00 bills payable.

The debit side of the gas works account at the end of last year showed that the plant cost $259,940.05; as I remember that was the total footing of that account. Then I had $25,000.00 of the mortgage that was on the plant when it was bought, after charging off depreciation, the account would be $236,960.05. The figures I took was the total amount that had gone into the plant. If you take the total value of the plant and add the depreciation and the bond on the plant at the time we purchased it, it would amount to $334,940.05.

Q. In order to make this as you say, $334,000.00, you add in this $25,000.00 mortgage?

A. Yes; that was on the plant at the time it was purchased. My idea was that we should charge off depreciation at the rate of 5 per cent. on the value of the plant. I didn't always charge that much. I did not value the plant each year, but made an arbitrary entry on an approximate estimate, not based on an inventory or any exact figures, but just having in mind the book value of the plant. One year it was more than 5 per cent., but there were some year- skipped in there. I think the first charge for depreciation was made in 1899 and was $7,500.00. In each case where I charged off depreciation it was approximately in my opinion, as I thought it ought to be entered up. As shown on the books repair and renewal ac-
278 count for 1905 is unusually small and 1906 is about normal.

The repair account for 1906 was $3,258.38. That is what we charged to repairs and renewals only, retort house was charged with its own repairs. Fitting account covers work in the shop and setting of stoves and meters, blowing out of services, adjusting lights and stoves. The fitting account increased very largely in 1905 and 1906. There was one year prior to 1905 when we sold gas fixtures that fittings account showed a profit; the profit from sale of gas fixtures went into that account. We carried into that account all of our promotion business, selling of gas stoves and all that. If we made a contract with a man to put in stoves, we put in the stoves, or did it through some one else, to promote the business. We didn't have anything to do with the stoves the man furnished his own stoves and we sold a certain amount of gas at a low price, 60c. or 75c. per M c. f., and the expense of that was charged into fittings account, that is, the connecting up of the stoves. We installed 700 stoves in 1906. The five light meters cost $5.85 at the factory, Bridgeport, Conn. The freight is extra and is charged to plan account along with the invoice of the meters. The time of the men in setting the meter is charged to fittings account. The service connections are charged to the property owner. Gratuitous work is such work cleaning out and placing stoves and looking after stoves after they are set

and looking after traps or obstructions in the services— and defect that can be remedied from the office and this also goes into fittings account.

The loss of the profits of going out of the stove and fixture business, that we had been in before, and the great increase in the work would certainly have to account for the increase in fittings
279 account for that is what did it. I think Mr. Kellogg has analyzed this in the fittings account in his audit. If I have charged fittings account with items that ought not to be there, then they ought not to be there and the same is true of the other accounts. I made my classification of the cost of gas knowing what each item was. I knew at the time when I made the charge on the books where everything went. The fitting account is kept in such a manner that an accountant who would take up the books could tell whether an item was properly or improperly in the account from me, what items went in there, if he knew the gas business, from a knowledge of the materials; the files show the materials.

If anything was improperly added to fittings account then it would increase the distributing expense.

Q. As I understand coal account starts with an inventory?

A. It didn't really start with an inventory, but from one year to another the coal on hand would be in the inventory; as it appears now it is kept in that way, carrying the balance from year to year; if the account is really paid it would be started anew. We charge retort house with what coal it takes out of the coal shed, and is weighed up and charge coal shed with the coal as it is paid for. The inventory of coal in the coal shed is treated as though there was a certain amount of coal on hand. The fact that there is an inventory in coal account shows that the coal in the shed is paid for, if the balance is on the other side, it shows we have not paid for as much coal as has been delivered to the retort house. The credit balance to coal account of approximately $1,200.00 in the balance sheet of 1905 is accounted for by the fact that the coal shed has delivered to the retort house more coal than is paid for, and that we
280 have unloaded the coal and used it immediately. If we would take out the cars of coal that has been unloaded and used and not paid for that coal account would balance. The coal is charged to retort house at 25c. a ton in advance of cost, which covers shrinkage and unloading. Unloading where it is shoveled direct from the car costs 7c. a ton, but where it has to be wheeled it costs about 10c. a ton. I figure that 25c. a ton will cover handling and shrinkage, and our experience is that it takes about that much. There is no other way that I can tell what it costs to handle coal but by my experience. We added only 15c. a ton in 1905, but we raised it to 25c. after 1905, because we had not charged retort enough to cover the cost of the coal. The coal account stands us for handling and shrinkage in 1905, 15c. a ton, and in 1906, 25c. a ton. I explain the large deficit in credit balance to coal account in the last two years, from the mere fact that we haven't stock on hand; we didn't have any coal on hand; we got out of coal last December and were

using it as fast as it came in, and didn't pay for it until 30 days after it was received.

We have a ready market for coke in the winter time, but it piles up on us in the summer. We have always been able to fill all of our orders for coke, but we have not had to advertise it in the last two or three years; prior to that we advertised it hard. In 1905 we got about $5.50 or $6.00 for coke. It has been $7.00 a ton for about a month and before that it was $6.50.

A large amount of the stove contracts were made in 1905, but the gas on those sales would be carried into 1906. The installations of the stoves were made as late as October and there was a year in which to use the gas and they run over to the next summer; the
281 contract with each one limited them to using the gas within one year. We started selling the stoves under that contract arrangement in July, 1905, but the bulk of them did not go in use until later and there were a few sold under something near the same scheme in 1906. We gave as I remember, eight thousand feet of gas with each stove, that is, we furnished this gas at a low price. There was a record made at the time of every contract stove.

Q. How did you know that you were selling gas at that price?

A. The consumer when he paid for the whole outfit was given a receipt that was for so much gas and a notation was made in red ink opposite his meter reading saying that he was entitled to so much gas, and after that was used up he had paid for it. There were no duplicate receipts kept; we had our page for our record of it and he had his receipt showing that he would not be dunned for the gas bill. I don't remember how many stoves were installed in 1906. Every time we installed a meter for one of those contracts we made a record for it, and the record was on that sheet and if the account has been closed the sheet would be removed from the ledger, and you could not tell anything more about that than anybody else who has discontinued using gas.

We refilled the benches of 6's in 1905 and one of the 9's in 1906 and I think we had the materials shipped the same time to fill the other 9's. The fillings for the 9's were all bought and shipped in 1906. One was filled in 1906 and two in 1907. We have charged all the filling for the three 9's to the business of 1906 and they went into the expense account of 1906 and whatever the expense was added to the cost of gas.

282 Each day the receipts are entered in the cash book. That is done by adding the stubs, which are kept with the cash and the bills. The total of those stubs are entered up and they should balance with the cash for every dollar that is taken in, a stub is made out also.

The old purifiers were taken out as soon as the new ones could be put to use. The old ones are included in Mr. Pratt's inventory. They were sold this year for junk, but they were there at the time he made his inventory.

The paving was put in down at the works in 1905 and is charged to gas works account, and the rip-rapping also went into gas works account, but wherever we used old material and such stuff as fire

brick taken from the benches no charge was made for that, but just the labor of putting it in the rip-rap after it had been wheeled out from the retort house. The foreman would give us a slip saying so many hours at such work, designating it and the nature of the work would not go into the books.

We have bought a large number of meters since 1892. At that time we had 2,109 and had 3,728 on December 31, 1906.

I had nothing to do with the preparation of Mr. Pratt's inventory, and did not assist in any way in making it. I did not give him any information, for he went over the plant and got the information for himself; got the number of meters from the book. There are about 100 meters on hand down at the shop, that are not installed, being repaired and painted. The original cost of the counter in the office was $300.00. We bought it in 1894 when we moved to the up-town office. That was the original counter in 1901. We had an addition built to it that cost $325.00, and that counter with a small
283 part of the railing at the back cost $625.00, including a little coat room at the end and there is another little item of about $75.00 for the glass partition.

The new station meter at the works, I don't know what it cost. It did not go in the books as one item, for we bought the valves, the fittings and all that, and then there was another item of the labor. The eight-horse Troy engine was purchased at $350.00, in the summer of 1903; the tar extractor in 1901 or 1902. The Clayton compressors were purchased in July, 1906. I think they cost $570.00 each, without the tanks, connections and fittings. There were two of them.

Q. Is it your idea that all of this property connected with the gas business like the counters and contents of your office that have been charged into repairs and renewals and been paid for by the gas consumers should be charged to capital.

A. I think all the property of the company should be included in the inventory because it replaced part of the original capital. The desk and safe and things we have now are ones that replaced the original ones we had and they are part of the property account.

As I find from the invoices the original high pressu-e main was charged to Marion entirely and none of it has been charged over and charged to gas account. There were no bonds issued for the Marion plant; it has all been carried as a floating debt.

Q. Then if the cost of the high pressure pipe from the works to the city limits is left standing in the Marion account as it now stands, there would be no floating debt on the Cedar Rapids plant proper, on January 1, 1907.

284 A. There would be more, because it—the high pressure line between the works and the city limits hadn't been paid for by the Marion end, it would have to be paid for by Cedar Rapids end, and that would increase the floating indebtedness of the Cedar Rapids plant. The Cedar Rapids floating debt does not include the high pressure line to limits. And it is not included in Mr. Kellogg's statement as a part of the Cedar Rapids debt, and I

have not included it in my statement of what has been the cost of gas.

Q. You have assisted in the preparation of the case for Mr. Pratt and Mr. Cowdery?

A. No, sir; I did not furnish them any figures at all, and only know the basis of their estimates from hearing it here in the court room. Mr. Pratt's inventory shows 23,000 feet of 3-inch, high pressure line, which he figured was the line from the works to the city limits; this is in his inventory; how he made up the cost of gas from that I don't know.

Redirect examination:

I was asked with reference to the American Cereal account. I did not take that leaf out of the consumers' ledger, and do not know when it was taken out or by whom, and did not instruct any one to take it out. I have what is known as the meter route record book on which the statements of the meter readings are taken each month by the meter readers; the one that relates to the American Cereal company, and contains the original entry of the reading of their meter for the year 1906 for each month. These books are turned into the office and the readings are posted from these route
285 books to the accounts in the consumers' ledgers. The subtractions are there made and the amount of the gas bill is extended. The consumption of gas by the American Cereal company is as follows: No gas was used in 1906 until November. In November, 1906, they used 167,100 c. f. The bill amounted to $208.88. That consumption was in excess of 50,000 c. f. per month and they got a discount of 25c. per M. c. f., which amounted to $41.78. The Cedar Rapids Republican got the same rate whenever it used 50,000 a month or over and the Evening Gazette would have gotten the same rate if they had used that amount. They have sometimes been in excess of 20,000 and then have gotten a rate of $1.10 net. For November the plaintiff received $167.10 from the American Cereal company and that money went into the cash of the company. In December, 1906, they consumed 408,200 c. f. of gas and were entitled to a net rate of 95c. per M. c. f., making the net amount received from them $388.79. It would take 200 of our consumers at the average rate of consumption to consume as much gas as was consumed by the American Cereal company in December, 1906, and they consumer as much gas as 800 of our minimum consumers and we had but two meters in the mill, setting there side by side, one meter was not large enough and instead of putting in one very large meter we took two smaller ones. When the American Cereal company got this rate they put in their own exhauster, did all of their own fitting, including the placing of the exhauster, which brings the gas to their plant. It was not necessary for the plaintiff to enlarge its main, and we simply extended our pipe to their plant.

The only persons who get a different rate for gas from the regular scheduled rate are the employés of the company who pay
286 $1.00 per M. c. f. for what gas they use, irrespective of the amount, and the United States, which pays 10c. in excess

of the sliding scale, because they don't pay until the following month. They are always a month late. The plaintiff has never to my knowledge furnished gratuitous gas to any newspaper, political or public officer. We have always been very careful to treat all customers exactly alike and have treated them all alike. Any customer in the city is entitled to the same rate as the Cereal company if they use the same amount of gas, and that rate has been held out to consumers, and is held out to all consumers now.

J. R. Meader was originally the business agent of the Peoples' Gas Light company of Chicago. He came to Cedar Rapids, furnished his own stoves, office help, did his own advertising, had his own solicitors and solicited business along our mains in parts of the city where I was unable to get enough consumers to make it profitable to extend the mains. When the consumer wanted a gas stove, he entered into a contract to furnish it in the house, if a gas connection was already in the house for $15.50, as I remember, and in addition to setting the stove in there, they were entitled to 8,000 feet of gas to be used on the premises where the stove was set and within twelve months. He collected the $15.50 from the applicant for the stove and the gas company connected the stove up and for that work received no pay, but received $5.00 or $5.50 on each one of the contracts for the 8,000 feet of gas we furnished, and that money went into the receipts of the company, and the total gain in business for the year was something over 700 consumers.

Q. You may explain the securing of the meter prover.

287 A. We made various attempts to agree with the meter after it was installed, by making careful measurements of the relief holder but the difficulty with this test was we could not get the gas at the same temperature, and in proving a meter it is essential that the gas or air used to test it are at the same temperature. After making two or three attempts we began to inquire for the Victor prover and Mr. Pratt first told us where we could get this one, and we got it out here, by-passed the big meter and made special connections between the big meter and the prover and made a series of tests, and corrected the amount we found the meter off. This in no way affected the amount that went through the consumers' meters, which is arrived at by adding the consumption of the individual meters. The Cedar Rapids National Bank is a small consumer and pays the regular rate for gas. The Marion plant used no gas in 1905.

The Marion line was completed in July, 1906, and it was not until December 1, 1906, that it was necessary to turn on all the time, for some time before the compressor had been used on the Marion line during the noon hour. When we shut off the west side high pressure line, the compressors are then employed to pump gas for Central Park and Marion only, and you can take the speed of the compressors then and they show that when the west side is being used the speed is more than double what it is when pumping gas to Marion and Central Park alone, and these facts show that more than half of the gas going through the compressor goes to the west side. The compressor helps to furnish pressure for the east side in some

places. In Central Park there is a 2-inch high pressure flow-
288 ing into a 4-inch low pressure main, and besides that there are a number of consumers on the east high pressure main direct.

On the end of the high pressure line on the west side, "E" avenue and Eighth street, there is an automatic governor that leads a 3-inch line into a 4-inch, and there the pressure is distributed through those other pipes to all the customers in that district. At "A" avenue and Seventh street west, there is another governor that feeds into the low pressure system in that district north of First avenue; at Second street west and Seventh street is another governor that aids the low pressure system in the surrounding territory. Also another governor at Third avenue and Seventh street, which lets the gas from the high pressure to the low pressure system on Twentieth street and "B" avenue east, which is the end of the high pressure line, there is a governor which feeds the high pressure into the low pressure in the Central Park district. On Tenth avenue east, services are laid direct from the high pressure main into the house. After we get into the house, an individual governor is put in on that service and the pressure is individually reduced for that one consumer from ten pounds, which we normally carry on the high pressure to three inches of water, and for the safety of that consumer whose gas is brought into his house under 10 pounds pressure, a mercury seal and vent pipe are used between the reducing governor and the meter, so that if for any reason the governor fails to work his system of pipes and fixtures will not be subject to the high pressure.

Based on my knowledge of this plant and my knowledge of the operation of gas plants in my opinion this high pressure line from the works of the city limits at Kenwood is a proper expendi-
289 ture of money for the Cedar Rapids system. And it has relieved to a great extent the low pressure in the Central Park district. It is an absolutely necessary expenditure of money in order to raise the pressure in Central Park district, above which can be furnished on the low pressure system. The high pressure system is the cheapest way of conveying large amounts of gas any distance.

The original price for gas when the plant was started was $1.50 a thousand feet. In 1885 it was $2.50 for illuminating and $2.25 for fuel. In 1888 the price was reduced to $2.25 and $2.00. In 1892 the net price for illuminating gas was $1.80 and for fuel $1.50; 1896 the price for illuminating gas was $1.60, for fuel $1.35; 1900 the price was for illuminating purposes $1.40, for fuel $1.25. The net price of $1.25 was from that time on charged for all gas, whether for illuminating or fuel purposes in quantities of less than 10,000 c. f. That is the gross bills were $1.40 and the net bills were $1.25. On February 1, 1905, the gross price was reduced to $1.25 and the net price to $1.15. And the present sliding scale was put into effect. The net price was that charged where payment was made before the 10th of the month.

The chairman of the light and water committee stated to me that they had not investigated as to the fair price of gas before the ordi-

nance fixing the 90c. rate was passed, and said that he thought their action in the matter was hasty.

I think the report of Fuertardo appeared January 13, 1906, and there were a number of changes in the council after that date and before this ordinance was passed. There were five or six changes in the council.

290 The express companies have had the matter up with us with reference to collecting our gas bills and they want 5c. for each bill so collected. This would amount to $2,400.00 a year for collecting all of our bills, and their idea was that the people would go to their office in the outlying districts and leave the money and they would receipt the bill. They would not collect the bill but simply transmit such money as they received.

We have an adding machine in our office, purchased four years ago, at $210.00, which is not included in Mr. Pratt's schedule of property.

"It is admitted by the parties that the outstanding stock of the plaintiff company is $150,000.00."

Q. Explain the method of correcting the station meter readings for temperature?

A. The volume of gas depends on its temperature. If you raise the temperature of a c. f. of gas you have slightly more volume, 60 degrees is used as the basis of measuring gas because it is considered the average temperature at which gas is measured in the place of consumption and in order that the measure of the gas shall be as nearly equal as possible the temperature of the gas as it passes through the station meter is taken—in the month of September for instance there were 30 temperature readings taken each day, and the gas passes through the meter according to these readings in September at a temperature of 75 degrees. The difference of this volume and what it would have been had it been measured at 60 degrees is found and is deducted at the end of each month from the monthly consumption. In answering interrogation No. 16, attached to defendants' answer, I added the receipts from coke

291 and tar to the income instead of substracting them from the manufacturing cost, and that method of figuring made no difference to the final outcome. The American Cereal Company used 23,000 feet of gas prior to 1906 and paid $24.46, that is the entire amount they consumed and paid for in 1905. Mr. Pratt suggested where we could get a meter prover in the fall of 1906, one time when he was visiting in Cedar Rapids and said he would look one up for us. We got the meter prover in June, 1907, and after Mr. Pratt had made his inventory. If the American Cereal Company had paid the dollar rate it would have paid $408.20 for the month of December, 1906.

The conversation I had with Mr. Campbell, chairman of the light and water committee, with reference to the 90c. ordinance, was in the summer of 1907, and he was a member of the council at that time. He told me they had not investigated the matter.

The boilers that we got from the cereal mills were not in the fire

and were not injured in any way; they were taken out because when the American Cereal Company rebuilt they discarded their rope transmission to electrical transmission and reduced their boiler capacity. The boilers were in perfectly good condition.

A. T. AVERILL being sworn testified as follows on direct examination:

I am president of the plaintiff company. I became interested in the gas works in the latter part of 1874. The other parties who secured interests in the plant at that time were Homer Bishop, John Thomas and Mrs. John Thomas. We purchased a half interest in the plant at that time and the Higley Brothers then owned
292 the other half interest, buying their interest just a short time before I purchased mine.

The stock for the half interest that I negotiated for, cost us $16,000.00. It was bought subject to a mortgage debt of $25,000.00. There was a second mortgage on it at that time which the then owners took up out of the funds received for their stock. The second mortgage was for $15,000.00, and I think the bonds were put up somewhere to secure the loan.

The $25,000.00 first mortgage bonds bore 10 per cent. interest.

When we first purchased the plant I didn't have much to do with it, the Higley Brothers were running it and it run behind; then we got a man from Kansas to come here and he thought that he could run it at a profit, but made a failure. I owned a one-third interest in it and Mr. Higley owned one-fourth interest at this time, and I bought Mr. Higley's interest and let the superintendent go and went down to the plant myself with the determination to either make it pay or blow it into the river. I superintended it quite a good many years myself. I got a very small salary, practically giving the time that I put in to the company.

In 1878 or about that time, we rebuilt a part of the plant by puting in a new set of purifiers and about two years later purchased three additional lots and built holder No. 2, that is the middle size holder. My recollection is that the next year we built a retort house and put in it a bench of 5s, and the next year built the condensing room and purifying room on the lower end of that block; the buildings that are used for engine room and meter room now.
293 The machinery was all replaced between 1879 and 1884, except the small holder, which is still in existence, but not in use.

In the '90s we rebuilt the tanks and purifier, put in a few benches of 6s, and tore out the old and put in a water gas set.

When I first took charge of the plant the company was charging $4.50 per M c. f. We paid $3,000.00 for Lots 1 and 2 in Fractional Block 10 in 1902.

I am acquainted with the value of the real estate owned by plaintiff. In my opinion the five lots in Fractional Block 9 are worth $25,000.00. The lots are about two hundred feet deep. We have had undisputed possession of the lots for more than twenty years. The small holder is back from First street, about one hundred feet,

and the rear line of holder is about 125 feet from First street. In my judgment the two lots in Fractional Block 10 are worth $5,500.00, and the five lots in the Annex are worth $20,000.00. On the Annex I did not include the buildings, on the other lots I did. We purchased the Annex with a view of erecting a holder there and for any other machinery that we might put in. In my judgment the purchase of the Annex was a necessary investment for the company, looking to its future business. We considered erecting a water gas set on that this year and just before the passage of this ordinance when we made the contract for the new water gas apparatus, and that matter was considered after the passage of the ordinance and we made no contracts for machinery, and no improvements that we could possibly help.

With reference to improvements and repairs this year we have got along with the lowest limit we possibly could, believing
294 if the ordinance was sustained, we would either have to quit the business or abandon the property.

Q. Do you know what investors were able to get on investments of various kinds along about the time you took charge of this plant?

A. Yes, sir. We could get anywhere from 15 to 25 per cent., and loans were being made along about that time on lands 10 per cent. for five year loans with 10 per cent. commission. The rates gradually grew less for several years afterwards, and the rates on land loans in 1884 or 1885 were from eight to ten per cent. From 1878 to 1888 there was always plenty of paper floating around that could be purchased at a discount so that one could make about 20 per cent. on the cash on hand. About 1883 we started the Cedar Rapids Savings bank, of which I was a director and we averaged at least 10 per cent. on our loans at that time and that continued for some time afterwards. The loans were all first class real estate mortgage loans entirely.

The plaintiff is assessed for $260,000 for the year 1907, or more than $3,000.00 of taxes more than it paid last year.

I am sufficiently acquainted with the operation of the plant to know some of the mains that will have to be enlarged. Some of these are the following: On Second avenue from Fifth to Sixth streets, the Central Park district, and the Pawnee mill district which will require an expenditure of money before we can furnish them with a supply of gas.

Q. Have you had experience with reference to depreciation of different kinds of machinery?

A. Yes; of gas machinery and wagon company, which I
295 run for several years. It is true that the gas company's machinery continually depreciates because of its being inadequate for the needs of the company. Again, if we were using the same benches that were first installed it would cost 50 per cent. more to make gas than it does with our present benches, because there has been advancement in the methods of heating the benches. These improvements have been in the advancement of the art, and have required us to take out the old benches and put in new. The same way with the mains; some parts of the old mains were made

of wood and we had to take those mains out and put in cast iron ones; the leakage was so bad we couldn't afford to continue them.

The policy of the plaintiff company with reference to extensions has been liberal. We have gone beyond what the ordinance requires us to do.

Q. You may state whether or not, in your judgment, the earnings of the Cedar Rapids Gas Light Company have been more or less than the earnings of other manufacturing businesses and institutions.

A. It has been very much less.

The city water works makes provision for a discount of 15 per cent. for prompt payment. I think gas is the cheapest method of lighting known; it doesn't cost to exceed one-half what electricity costs, and most of our consumers think it is cheaper than any other fuel.

Cross-examination:

I began business in Cedar Rapids in 1865. I have been president of the Cedar Rapids National bank for 21 years. It is the largest bank in Cedar Rapids in point of deposits and has been for a number of years. I have also been engaged in other busi-
296 nesses extensively. I had a wholesale grocery stock for a few years. Also carry on a farm, also director in Cedar Rapids and Marion Telephone company, and have been a director since its organization, and have looked after its business to quite an extent. I have also been engaged in manufacturing wagons for a short time. I am also director in the Waterloo Telephone company. I have also been interested largely in real estate for many years in several states, and have handled a great many thousand acres, but the land has mostly been handled by syndicates and Mr. Cole of Chicago, has done most of the selling, but I have looked after the purchasing of the land and financing the matters to some extent. I have a plantation and raise cotton. I own a hotel, and am interested in coal mines in Kentucky and built a railroad to it, but that does not require much of my attention. I personally examine the lands I am interested in and keep in touch with what is being done. The gas business is a small part of my business. It requires more attention than any other business that I have ever had. I go to the gas office the first thing in the morning and remain there for an hour or two and then I go back to the gas office again about 11 o'clock in the forenoon. When I go down town after dinner I go to the bank and stay until 3 o'clock, and from there I go back to the gas office. Part of my private business I transact from that office. Mr. Thomas has been a director for many years and is now vice president of the gas company. There have been some sales in the vicinity of the gas property which have changed hands since we answered the interrogatories and I think the property is worth what I gave on my direct examination.

Plaintiff now offers in evidence the answers to the interrogatories filed August 10, 1907, in this case, marked Exhibit 50. It
297 is admitted that the interrogatories just offered in evidence — used by the defendants in cross examination — A. T. Averill

and Glenn M. Averill. The defendants object to Exhibit 50 as being incompetent, irrelevant and immaterial and for the further reason that the evidence in this case has not been taken in the form of depositions, but in open court and for the further reason that the witnesses who gave the answers to the interrogatories are present in court and should be called and *his* testimony given upon the witness stand. Taken subject to objection.

Answer. The authorized capital stock of the Cedar Rapids Gas Light Company on December 31, 1906, was $150,000.00, all of which had been issued prior to said date. The authorized bond of the said Cedar Rapids Gas Light Company on the 31st day of December, 1906, was $75,000.00. These bonds were issued as follows: 1887, $43,000.00; 1897, $5,000.00; 1898, $5,000.00; 1901, $7,000.00; 1903, $15,000.00; all of which bear interest at the rate of 5 per cent per annum, payable semi-annually.

In addition to the bond issue designated above the Cedar Rapids Gas Light Company has a floating indebtedness contracted prior to December 31, 1906, of $6,100.00 bearing interest at the rate of 6 per cent. per annum, payable quarterly. The Cedar Rapids Gas Light Company owns no securities of any other company or person whatever.

Int. 6. What additions have been made to the plant of the Cedar Rapids Gas Light Company during each of the years from December 31, 1901, to December 31, 1906, and give a detailed statement of the cost of each of said additions?

298 Answer. The following additions have been made to the plant and works of the Cedar Rapids Gas Light Company during the years 1902 to 1906, inclusive. In the year 1902, new mains were laid and installed to the value and cost of 9,999.48. In the year 1903, new mains were laid and installed to the value and cost of $10,026.10; also a holder designated as holder No. 3, at a cost price of $15,490.68. In 1904 mains were laid and installed to the value and cost of $6,847.33 and a retort house and equipment were also installed at a cost price of $15,550.75; during the year 1905, mains were laid to the value and cost of $14,590.58, also a purifying house and equipment at a cost of $9,427.00, built and paid for during the two years 1905 and 1906. During the year 1906, a condensing and scrubbing apparatus were built at a cost of $8,000.00, boilers installed at a cost of $1,576.60; a building erected at a cost of $1,252.46, and mains laid and installed of the value and cost of $10,610.45.

The affiant is unable to state the exact location of the several mains laid during said years for the reason that a large part of them were short extensions of various lines of mains throughout the city of which the Cedar Rapids Gas Light Company has kept no record of the exact date of installation, except as to the cost of the same.

Int. 7. What was the average candle power of gas supplied during each month of the year ending December 31, 1906.

Answer. The average candle power of gas furnished consumers and patrons of the Cedar Rapids Gas Light Company during the several months of the year 1906, was eighteen candle power.

299 Int. 8. What was the daily maximum output of mixed gas during the year ending December 31, 1906? Give the date.

Answer. The largest days' output of gas during the year 1906 was on December 24th, when 405,400 cubic feet of gas were sent out.

Int. 9. What is the maximum daily capacity of the work of the Cedar Rapids Gas Light Company, (1) Coal Gas; (2) Water Gas; (3) Total Coal and Water Gas; (4) Pintch Gas?

Answer. The maximum daily capacity of the plant and works of the Cedar Rapids Gas Light Company is approximately 515,000 cubic feet, divided as follows: Coal gas, 390,000 cubic feet; water gas, 125,000 cubic feet. The Cedar Rapids Gas Light Company manufactures no Pintch gas.

Int. 10. What was the total amount of gas made for each year from December 31, 1901, to December 31, 1906? State the amount for each year separately.

Answer. The total amount of gas made by the Cedar Rapids Gas Light Company during the years 1902, 1903, 1904, 1905 and 1906, was as follows:

For the year 1902, 54,164,900 cubic feet.
For the year 1903, 64,757,200 cubic feet.
For the year 1904, 73,430,600 cubic feet.
For the year 1905, 86,723,100 cubic feet.
For the year 1906, 100,764,000 cubic feet.

Int. 11. What was the total amount of gas sold each year from December 31, 1901, to December 31, 1906, giving the amount each year separately?

300 Answer. The total amount of gas sold by the Cedar Rapids Gas Light Company, during the years 1902, 1903, 1904, 1905, and 1906, was as follows:

For the year 1902, 49,527,800 cubic feet.
For the year 1903, 58,880,900 cubic feet.
For the year 1904, 65,205,400 cubic feet.
For the year 1905, 77,782,309 cubic feet.
For the year 1906, 92,306,100 cubic feet.

Int. 12. State the total amount of gas manufactured by the Cedar Rapids Gas Light Company for each year from December 31, 1901, to December 31, 1906, which was unaccounted for, the percentage unaccounted for for each year, the net selling price for each year from December 31, 1901, to December 31, 1906.

Answer. The gas made by the Cedar Rapids Gas Light Company, and unaccounted for, or which was lost between the meter which measured it at the works, before going into the holder and the meters of the consumers during the years 1902, 1903, 1904, 1905 and 1906, and the per cent. of the gas manufactured that was lost or unaccounted for, was as follows:

For the year 1902, the unaccounted for gas was 4,637,100 cubic feet equalling approximately 8.1 per cent. of the amount made. The gas was sold that year at the rate of $1.35 per thousand feet, with discount of 10 cents per thousand feet if paid on or before the 10th of the month succeeding.

For the year 1903, the unaccounted for gas was 5,876,300 cubic feet, equaling 9 per cent. of the amount manufactured, 300/ and the gas was sold that year at the rate of $1.35 per thousand feet with a discount of 10 cents per thousand cubic feet if paid on or before the 10th of the succeeding month.

For the year 1904, the amount of unaccounted for gas was 8,225,200 cubic feet, equalling 11.2 per cent. of the amount manufactured and the gas was sold during said year at the rate of $1.35 per thousand cubic feet, with a discount of 10 cents per thousand cubic feet if paid on or before the 10th of the succeeding month after used.

For the year 1905, the amount of unaccounted for gas was 8,940,800 cubic feet or 10.3 per cent. of the amount manufactured and gas was sold during said year at the rate of 1.25 per thousand cubic feet with a discount of 10 cents per thousand cubic feet if paid for on or before the tenth of the succeeding month. Except that in the month of January, 1905, the same rate was charged as during the year 1904.

For the year 1906, the amount of unaccounted for gas was 8,457,900, being 8.5 per cent of the amount manufactured and the gas was sold during said year at the rate of $1.25 per thousand cubic feet with a discount of ten cents per thousand feet if paid on or before the 10th of the succeeding month after used.

Int. 13. State the meter rates and discounts for each year from December 31, 1901, to December 31, 1906, classified as to, (1) general consumers; (2) special consumers or consumers charged a different rate, stating the rate charged such consumers?

Answer. In answer to the thirteenth interrogatory, the plaintiff says that the Cedar Rapids Gas Light Company charged its consumers for the several years 1902, 1903, 1904, 1905 and 300 1906, the following meter rates, to-wit:

For the year 1902, gross rate $1.35, net rate $1.25, on gas consumed where the amount consumed during the month was less than 10,000; where the amount consumed was more than 10,000 and less than 20,000 Gross rate $1.35, net rate $1.20, where the amount consumed was more than 20,000 feet and less than 30,000 gross rate $1.35, net $1.15; where the amount consumed was more than 30,000 cubic feet and less than 40,000 cubic feet, gross rate $1.35, net rate $1.10; where the amount consumed was more than 40,000 cubic feet and less than 50,000 cubic feet gross rate $1.35, net rate $1.05; where the amount of gas consumed was more than 50,000 cubic feet $1.35 gross rate, $1.00 net rate.

That the rates for the year 1902, continued up to and including the month of January, 1905.

That from and after the month of January, 1905, and including the year 1906, the following meter rates were charged the patrons of the Cedar Rapids Gas Light Company, to-wit: General gross rate $1.25, general net rate $1.15. If more than 20,000 cubic feet consumed and less than 10,000 during a month the gross rate is $1.25 and net rate $1.10; if more than 40,000 cubic feet are consumed and less than 50,000 the gross rate is $1.25, net rate $1.05; if more than

50,000 cubic feet are consumed then the gross rate is $1.25, net rate $1.00.

The Cedar Rapids Gas Light Company has no special consumers who were charged a less meter rate than that stated herein except *that* the employés of the company, who were and are charged a rate of $1.00 per thousand cubic feet of gas consumed.

300*l* The net rate was rate which was charged where payment was made on or before the 10th of the succeeding month after gas was used.

The gross rate was charged in each case where there was a failure of patrons to pay the minimum rate on or before the 10th of the month after the gas was used.

Int. 14. Have you the original contracts or certified copies thereof, covering your purchases of materials entering into the manufacture and distribution of gas during the year ending December 31, 1906? If so, attach copies thereof as a part of your answer to this interrogatory.

Answer. The plaintiff in answer to the fourteenth interrogatory states that it has not the original contracts or certified copies of the contracts covering the purchases of materials entering into the manufacture and distribution of gas during the year ending December 31, 1906. The purchase of material and supplies are made upon the market the same as private parties, and without the making of formal contracts.

Int. 15. State the amount received each year from December 31, 1901, to December 31, 1906, giving the cubic feet, net price and income from the sales of gas to (1) general consumers, (2) special consumers or consumers having a special price, (3) Pintch gas sales, (4) income from other sources, specifying the same and the total income from all sources.

Answer. In the year 1902, there were 49,527,800 cubic feet of gas sold for which the Cedar Rapids Gas Light Company received $60,636.78. For the same year the company received for coke $10,864.57, for tar $2,023.13.

300*e* In the year 1903, there were 58,880,900 cubic feet of gas sold for which the Cedar Rapids Gas Light Company received $72,346.30, and for the same year, the company received from coke $13,855.94, for tar $2,489.98.

In the year 1904, there were 65,205,400 cubic feet of gas sold for which the Cedar Rapids Gas Light Company received $80,000.00, and for the same year, the company received for coke $12,214.56, for tar, $1,761.87.

In the year 1905, there were 77,782,300 cubic feet of gas sold for which the Cedar Rapids Gas Light Company received $86,701.04, and during the same year the company received for coke $16,577.93 for tar $1,285.57.

In the year 1906, there were 92,306,100 cubic feet of gas sold for which the Cedar Rapids Gas Light Company received $95,290.94, and during the same year the company received for coke $16,399.25, for tar $988.35.

The Cedar Rapids Gas Light Company has no other income or

source of income except those herein stated and the rents from the houses located on Block 10, Original Town now city of Cedar Rapids, from which it has received the following towit: For the year 1902, $480.58; for the year 1903, $50.62; for the year 1904, $563.77; for the year 1905, $292.91, and for the year 1906, $529.99.

Int. 16. State, in detail, giving the items thereof, of the operating expenses of the Cedar Rapids Gas Light Company for each year from December 31st, 1901, to December 31st, 1906, stating the same in accordance with the classification of accounts used by our company setting opposite each general heading and sub-heading the total costs. In a column opposite the total costs in produc-
300*f* tion items state the cost per thousand cubic feet made, and opposite the total costs in all items state the cost per thousand cubic feet per gas sold. State so as to show the total production, less the income, from residuals, the total distribution, cost, general expenses, etc.

Answer. During the years 1902, 1903, 1904, 1905, and 1906, the operating expenses of the Cedar Rapids Gas Light Company were as follows:

For the year 1902, manufacturing including purchase of coal and all expenses connected with the operation of the works $31,221.64; office expense $5,670.06. Interest and taxes $5,357.44, written off for depreciation $10,000.00.

For the year 1903, manufacturing including purchase of coal and all expense connected with the operation of the works $39,535.77, office expenses $6,033.97; interest and taxes $5,256.94; meters and setting stoves $972.80, written off for depreciation $20,000.

For the year 1904, manufacturing $42,938.16, office expenses $7,014.00. Interest and taxes $6,503.52, written off for depreciation $12,500.00.

For the year 1905, manufacturing $55,289.07, office expenses $6,785.37. Interest and taxes $6,213.54, setting of meters and gas stoves $6,758.98, written off for depreciation $10,000.00.

For the year 1906, manufacturing of gas $61,009.31, office expenses $7,795.70. Interest and taxes $6,849.03, setting meters and gas stoves $5,943.83, written off for depreciation $13,000.

That during the several year- 1902, 1903, 1904, 1905, and
300*g* 1906, the cost of gas per one thousand cubic feet of gas manufactured and the cost per one thousand feet of gas sold were as follows:

Year.	Cost per 1000 cu. ft. of gas mfgd.	Cost per 1000 cu. ft. of gas sold.
1902	.9676	1.055
1903	1.1008	1.219
1904	.9394	1.057
1905	.9806	1.093
1906	.9469	1.025

The cost of practically all of the materials entering into the manufacture of gas has increased at the present time over, the cost of the same materials in the year 1906, coal had advanced ap-

proximately 40 cents per ton, and the costs of the materials entering into the manufacture of gas will in the judgment of affiant be 4 cents per thousand feet more for the year 1907, than they were for the year 1906.

Int. 21. State the amounts written off for depreciation on plant property and construction, during the years 1901, 1906, inclusive, giving the separate amounts for each year.

Answer. During the years 1902, 1903, 1904, 1905, and 1906, the Cedar Rapids Gas Light Company wrote off the following amounts out of its gross earnings on account of depreciation.

In the year 1902	$10,000
In the year 1903	20,000
In the year 1904	12,500
In the year 1905	10,000
In the year 1906	13,000

Int. 24 and 25. State the maximum daily output of gas during the year 1906, giving the date. And state the minimum
300*h* daily output of gas during the year 1906, giving the date.

Answer. The maximum day's output of the Cedar Rapids Gas Light Company was 405,400 cubic feet, which was on December 4th, 1906. The minimum day's output was on the 4th day of July 1906, when the send out was 202,470 cubic feet.

Int. 27. State in detail the number of feet of mains laid during each calendar year from 1901-1906, inclusive specifying whether for extensions or replacements, giving the location, the costs of such mains, the cost of laying and the amount expended in re-laying the pavements, specifying separately the cost of re-laying (1) brick pavements, (2) asphalt pavements, (3) macadam pavements.

Answer. The Cedar Rapids Gas Light Company does not keep a yearly record of the exact location of each piece of main laid in and is therefore unable to state the exact date of the laying the mains, but it does keep a book account of the costs of laying mains and the total cost of laying during the year 1902, 1903, 1904, 1905, and 1906 were as follows:

Year.	Cost of laying mains.
1902	$9,999.48
1903	10,026.10
1904	6,847.33
1905	14,590.58
1906	10,610.45

Int. 28. State the number of connections made from the main in street to curb in front of private lots during each of the years 1901-1906, cost of such connections, the amount received therefor
300*i* (1) from the city, (2) from lot owners, (3) and state the amount returned by the Gas Company to lot owners.

Answer. In answer to the 28th interrogatory affiant states that the Cedar Rapids Gas Light Company is unable to state the number

of connections made from the mains in the street to the curb in front of private lots during either of the years 1902, 1903, 1904, 1905, 1906 for the reason that it has not kept a separate item of such connections. That the method adopted by the Cedar Rapids Gas Light Company with reference to the meeting of connections is that when an application is made for connection the same is placed on a page of a loose leaf ledger, that all the memoranda concerning the same is kept upon said sheet and when the applicant appears at the office to pay the bill the page is removed from the ledger stamped paid and given to the applicant, and the Cedar Rapids Gas Light Company has no further record of the same except of the cash received.

Int. 31. State what the minimum charge is for service by the Cedar Rapids Gas Light Company for the year ending December 31st, 1906, the total amount of gas consumed by all persons who were charged the minimum fee for such service and the total amount received from all persons who were charged a minimum fee, and the number of persons charged the minimum fee.

Answer. The minimum charge made by the Cedar Rapids Gas Light Company for the year ending December 31st, 1906, was 46 cents, net; that is where the consumer did not use four hundred cubic feet of gas during the month he was charged the minimum rate of fifty cents or 46 cents net price.

300*j* The total amount of gas consumed by all persons who were charged the minimum rate by the Cedar Rapids Gas Light Company was 181,100 cubic feet. The total amount received by the company from all persons on payments of the minimum fee for gas during the year ending Dec. 31st, 1906, was $471.04, which was $262.77 in excess of $1.15 per thousand cubic feet for the said 181,100 cubic feet of gas consumed. There were 224 persons who were charged the minimum charge during the said year.

The placing of a meter and its connections upon the premises of a consumer involves the following reasonable expense for the year. Interest on investment $1.50; reading of meter $1.20; office expense $1.20; attending to complaints $1.50, which amounts to $6.60 or 55 cents per month. A large number of the consumers of any gas company are "unprofitable," consumers that is not taking sufficient gas to really be financially profitable to the company. So that the minimum rate which is charged by the gas company is nothing more or less than a "readiness-to-serve," charge, and is customary and is regarded as necessary for the successful operation of all plants.

Int. 32. What is the custom of the Cedar Rapids Gas Light Company with regard to charges for the services pipes from lot line into the buildings and for setting up gas stoves, furnishing tips, burners, etc.

Answer. The custom of the Cedar Rapids Gas Light Company with regard to charges for the service pipes from lot line into the building and for setting up gas stoves, furnishing tips, burners and supplies is to furnish the same substantially at cost including the cost of handling the same.

Int. 33. State the amount of service pipe laid by the Cedar Rapids

300*k* Gas Light Company during the year 1906, from the lot line to inside of building, the size thereof and the amount charged for each size.

Answer. The Cedar Rapids Gas Light Company is unable to state the amount of service pipe laid during the year 1906, for the reason that the same was laid under the system stated in the answer to the 28th interrogatory and no record of the exact location or the exact date when the pipe was laid is kept by the company.

Int. 34. State the number of consumers of the Cedar Rapids Gas Light Company that were charged less than the rate charged the ordinary consumer of gas, the amount paid by such consumers and the total amount of gas consumed. State in detail the names of such consumers and the amount of gas consumed by each and the rate charged each consumer.

Answer. There were no consumers of the Cedar Rapids Gas Light Company receiving rates less than those charged the ordinary customers except the employees of the company.

Int. 37. State the wages and salaries paid each class of laborers, the number of hours' work per day, and the number of laborers employed by said company for the year 1906.

Answer. The Cedar Rapids Gas Light Company pays approximately the following wages to-wit:

To firemen for twelve hours' work per day	$2.50
To ordinary laborers for ten hours' work per day	1.75

The number of men employed by the company vary, at some times a large force is employed at other times only a small number.

300*l* Int. 38. Give the names and salaries of the ten highest officials or employees of said company, giving the names and the amount paid each for the year ending December 31st, 1906.

Answer. The Cedar Rapids Gas Light Company does not have ten salaried officers, but the officers of the company are paid the following amounts, to-wit:

President, per year	$1800.00
Vice-President, per year	50.00
Secretary and Manager, per year	2400.00
Foreman at Works, per year	1020.00
Foreman at Shops, per year	1020.00
Chief Office Clerk, per year	1200.00
Second Office Clerk, per year	900.00
Third Office Clerk, per year	720.00

(These answers also include value of the plant and the answer with reference thereto is correctly set out as Ex. 46, Page 39.)

(Duly sworn to by A. T. Averill.)

301 *George McLean.*

The plaintiff then produced the above named witness, who being sworn testified on direct examination as follows:

My name is George McLean; I am 44 years old; I have resided in Dubuque all my life; I am at present president of the Key City Gas Company. I have been connected with that company since January 15, 1883. I commenced work for the company as meter inspector and works clerk and bookkeeper. I was meter inspector three years. In 1889 I was made secretary and purchasing agent; had these duties added to my other duties, except I had not been reading meters since 1886. In 1891 I was made superintendent and general manager of the company and also of the Consumers' Steam Heating Company, operated by the gas people. I was then secretary, general manager and superintendent from 1891 until I was elected president four years ago.

In the capacity of general manager and superintendent I had charge of the laying of mains and of all work of every kind, construction, operation and distribution, and the commercial department. As president I have had to deal with new works, have had charge of the business of every kind, in fact, I have been for years, the only active officer of the company. At the present time there is being used only 3,000 feet of the original distribution system, that was being used when I went with the company and which then consisted of fifteen miles of mains, the remainder has been abandoned, and new mains put down in their stead. There are different sizes of pipe that it does not pay to take up. What size of pipe will pay
for taking up, depends largely on where the pipe is laid,
302 what it will cost to remove it, and what it is worth when you get it back in your stock. Even at $1.25 a day it doesn't pay to remove old pipe. We would lay the new mains, relay the new service pipe and connect them with the plant and let the old pipe lie in the ground, and the old is no longer of any use.

As designer and stockholder I have been connected with the plant at Waterloo, also the one at Cedar Falls. The plant at Waterloo was built in 1901 and 1902. I made all the plans for the works, securing the site, arranged the buildings, selected the machinery, made the contract for its erection, and sent my men there to connect up the various parts of machinery and attended to all the physical property. I laid out the distribution system, contracted for the pipe and made all the specifications for laying this pipe line, as well as paid the men I had engaged and sent there. The plant at Waterloo took the place of an earlier plant but there had been no plant at Cedar Falls, until I went there. The present Waterloo plant is a coal gas plant, the one prior to that was water gas plant. My recollection was that the franchise was granted in 1884, and I bought it in 1900, so that the old plant was in operation 16 years. I abandoned the old plant, threw that away because it was wholly inadequate to the size of the town. In Cedar Falls we laid about five miles of mains the first year of operation. That is a coal gas plant also. It was started about the 1st of February, 1906.

I became acquainted with all the prices of machinery and materials that entered into the making of gas plants and kept a price book on apparatus. I have kept posted in the prices of gas machinery, and pipe, and of expenses of installing and operating a
303 gas plant, sometimes in a specific case of construction and always in general by receiving the cost and keeping it on file for reference.

I have kept track of the cost of manufacturing gas in the city of Dubuque and have prepared a schedule of the cost of gas, and have prepared a statement of what in my judgment would be the cost of gas in Cedar Rapids.

(Witness produces schedule and has the same marked Exhibit No. 10, which is as follows:)

EXHIBIT NO. 10.

Geo. McLean's Estimate on Coal Gas, 1907.

Coal to cost $4.62 a ton in shed.
Yield 9,700 cu. ft. of gas per ton of coal.
Residuals to sell for 50 per cent. cost of coal.
Leakage 8½ per cent. of gas made.

Cost per M Cu. Ft. Sold.

Coal	.26
Mfg. labor and salaries	.1478
Labor on residuals	.02086
Purifying materials	.006
Water at works	.00539
Sickness and disability, works employés	.005
Repairs works	.03923
Holder cost	.48461
Distribution labor and salaries	.09023
General expense	.035
Legal expense	.008
Bad debts	.0025
Taxes	.0355
304 Promotion and advertising	.0350
Fire and boiler insurance	.01
Distribution tools and appliances	.005
Repairs mains	.01161
Repairs services	.0058
Repairs meters	.0125
Distribution cost	.25144
Holder cost	.48461
Manufacturing and distributing cost	.73605
Reserve for depreciation of physical property only	.11175
	.85325

Interest not included.

Reserve for injuries and damage to persons and property of employés and of the public, and for explosions and other physical hazards, not included.

No reservation made for commercial, nor for sociologic hazards.

In this schedule of the cost of gas is included part the cost of labor, coal and other materials at Dubuque, which I will explain as I go along. The statement which I have prepared (Exhibit 10) is my judgment of what the cost of gas would be in Cedar Rapids. To explain my statement Exhibit 10, I desire to say, that I take the cost of coal as given to me by the Cedar Rapids Gas Light Company—$4.62 per ton in shed. I assume a yield of 9,700 c. f. per ton of coal carbonized which I believe is correct. I assume the residuals to sell for 50 per cent. of the cost of coal in the shed, and I take that from the statement which was handed to me showing 50.3
305 per cent. of cost of coal being the net return from residuals as shown by audit of the Cedar Rapids company for 1905. In other words I assumed the state of affairs that I found to exist here in Cedar Rapids. A ton of coal costs $4.62 and they get back from residuals $2.31, and I assume that fact in my statement. I also assume the leakage to be 8½ per cent. of gas made and from that basis I computed cost as follows:

Coal, 25c. per M c. f.; manufacturing, labor and salaries, 14.78c., which is taken from my own manufacturing labor account at Dubuque. My labor at Dubuque is 14.78c. per M c. f. of coal gas sold. The amount of gas produced from a ton of coal, 9,700, is taken from my experience and that is the most we can get. Now the labor on residuals in our accounting we keep separate; we charge up the labor, on the producing of gas, to send out of the whole into the mains. It costs me in Dubuque .02086c. labor on residuals for each M c. f. sold. The purifying materials I also take from actual operation at Dubuque, by checking our invoices of what went into the boxes and what went out for two years. I have divided the cost of oxide by our sales and we have paid 6 100 of a cent. For water at the water works .00569 per M c. f., which I took from what we actually pay the city of Dubuque for water. Sickness and disability of work-employés only, not including vacations and sickness of the office help, .005 per M c. f. Repairs of works is an item which I have based upon my experience for a series of years at the old works. I could not give that accurately for the present time because during the last three years I have abandoned one gas works and taken up another. The last year I run the old works I made no repairs that were not absolutely necessary to keep the works going, while
306 at the new works everything was absolutely new. I have no retorts or furnaces to put up, and I repaired the old works only once because they all had been abandoned, hence, I had to take the repairs from experience through a series of years before going into the new plant. I estimated those repairs at 3.926c. per M c. f., which makes the cost of gas in the holder 48.461 per M c. f. of gas sold.

I have figured the distribution, labor, salaries as 9.023c., which is

the precise cost of the Key City Gas Light Company for the year ending October 1, 1907, and I think it is doubtful whether that figure would be sufficient for the year. The next item is general expense which is based upon our experience during the same period and I fix that at 3½. The next item is our legal expense as based upon our experience for the first eight months of the year only. The next item is bad debts which is 3¼ per cent. There was a time a good many years ago when the Key City Gas Light Company made no provision for discount for prompt payment. The next item is promotion and advertising, which I have put down at what it would cost us in Dubuque because of the condition in Dubuque, which I believe to be more severe than it is here. It is a necessary item and you cannot maintain your business without it. And in my judgment it is part of a good business management of the size of the Cedar Rapids plant to expend that amount in advertising and promoting new business. It is practically unavoidable. I computed the taxes on the basis of what we are paying, which is 3.55c. per M c. f.; that is the tax we paid in 1906 and 1907. I figured promotion at .035. The next item is fire and boiler insurance, 1c. per M c. f. That is not based on what we are paying, for we insure only the merchandise and fixtures; we have not a dollar's worth on the works.

307 We do pay for boiler insurance, but we do not carry any insurance on the plant. This is arrived at from my knowledge and experience of the business. It is on the rates that were made to us by the insurance men who went over our plant and rated it.

The next is distribution appliances, which includes outlays furnished to the men in the distribution department, and is made up of the tools we lose. This is figured at ½c. per M c. f. of gas sold. Repairs to mains I figure at 1.161c. per M c. f. of gas sold, which is based upon experience of a long term of years. The next item which I have is repair service, .58c. per M c. f. of gas sold. This is based upon the proportion of service outlay that we charge up against repairs and is minimum amount. The repairs to meters I figure at 1¼c. per M c. f. This item makes the distribution cost 25.111c. per M c. f. of gas sold, and this makes the cost of gas at the burner 73.575c. per M c. f. and then reserving for depreciation of physical property only 11¾c. per M c. f. sold, making a total cost at the burner of 85.325c. M c. f. sold. This does not include any allowance for interest on capital either in stock or bonds. It includes no reserve for injuries or damages either to persons or property of the employés or of the public in general, nothing for hazards of any kind.

I have prepared a schedule showing my judgment and opinion as to the depreciation on the physical property. In this schedule I have taken the original schedule of valuation made by Mr. Pratt.

My schedule is as follows:

A. The first item is coke shed, which is wooden value $1,200.00; depreciation 4 per cent..... $48.00
Coal storage building, $6,450.00; depreciation 3 per cent..... 193.50
308 Stable, brick, $1,250.00; depreciation 2½ per cent..... 31.25
Work shop, brick, $1,500.00; depreciation 2½ per cent... 37.50
Work store room, brick, $1,450.00; depreciation 2 per cent..... 29.00
Apparatus room, brick, $3,745.00; depreciation 2 per cent..... 749.00
Boiler house, brick, $900.00; depreciation 2½ per cent... 22.50
Purifier room, $5,800.00; depreciation 2 per cent..... 116.00
Retort house, brick, $7,850.00; depreciation 5 per cent... 392.50
Retaining wall, $1,100.00; depreciation 2 per cent..... 22.00
Rip-rap-ing, $750.00; depreciation 2 per cent..... 15.00
Tanks, cisterns, $2,760.00; depreciation 5 per cent..... 138.00
Benches, $16,867.00; depreciation 7 per cent..... 1,180.69
Boilers and engines and extractors, $4,990.00; depreciation 7 per cent..... 349.30
Condensers, scrubbers and accessories $6,205.00; depreciation 3 per cent..... 186.15
Purifiers, $5,000.00; depreciation 4 per cent..... 200.00
Station meters, $2,700.00; depreciation 4 per cent..... 108.00
Station governor, $625.00; depreciation 3 per cent..... 18.75
Ammonia plant, $3,000.00, depreciation 5 per cent..... 150.00
Tools, $1,159.50; depreciation 10 per cent..... 115.95
Scales, $270.00; rate 5 per cent..... 13.50
Yard and works connections, $2,816.00; rate 7 per cent.. 197.12
Pumps, $255.00; rate 10 per cent..... 25.50
Water gas generator, $4,500.00; rate 8 per cent... 360.00
309 Holders, $62,500.00; rate 2¼ per cent..... 1,562.50

Mains, wrought iron, 47.3 per cent. of investment in value of mains.

I may say in explanation of this item I have separated the cast iron from the wrought iron rate of depreciation, and have assumed that the proportion of paving and asphalting over wrought iron mains is equal to that over cast iron mains, that is, they are in equal proportion of cost and by that method I arrived at 47.3 per cent. of the valuation of the mains being in wrought iron and the remainder cast iron, and the cast iron mains I put the depreciation on wrought iron mains 3 per cent. per annum, the value being $56,280.00, the depreciation per annum $1,688.40. Cast iron mains, value $62,706.00, rate 2 per cent., amount $1,254.12; service $115,289.00, rate 7 per cent., amount $1,070.23; meters and connections $29,384.00, rate 7 per cent., amount $2,056.88; gas arc lamps $3,575.00, rate 10 per cent., amount $357.50.

Q. What has been your experience with arc light lamps, as to depreciation?

A. Well, we bought our first arc lamps in May, 1901, and we have not one of them left today; they have all been superseded.

Office furniture, $1,876.00; rate 7 per cent.; amount $131.32.
Horses and wagons, $1,110.00; rate 10 per cent.; amount $111.00.
Materials, $7,298.50; no depreciation charged.
Stoves, $1,668.00; no depreciation charged.
Coal, $4,520.00; no depreciation charged.
The last three items were put in to make up the amount of the schedule.

310 These amounts represent my judgment and experience as to what ought to be charged each year for depreciation. They are the depreciation of the physical property only, and do not include any of the hazards.

These amounts represent my judgment and experience as to what should be charged each year for depreciation, and does not include such things as I term physical and political hazards, economic or sociologic hazards, but are figures for depreciation of physical property only. Among the physical hazards are explosions—explosions of benches for example—as we have suffered in Dubuque, and which is likely to occur in any works. Or explosion of purifiers or hydraulic mains, which has also happened in my experience, and in which I am spending a little money every year to guard against; explosion of tar extractor, something that cost me at Waterloo 50c. per M c. f. of gas sold during the first year I was in business. We had one damage suit that cost us $9,000, and the verdict plus interest and costs was 63.3c. per M c. f. of gas sold. Again at Cedar Falls there was an explosion that cost the company 1.35 per M c. f. of gas sold that year.

Another hazard against which we are not insured is spontaneous combustion of coal. We had trouble from that at Waterloo, which cost us 20c. per M c. f. of gas sold for that year. Explosion of station meters, such as occurred at St. Paul. That was from static electricity in that case. Explosion of the holder which may occur any time when your extractor gets wrong and you get an explosion in the holder from it. Explosion of the holder occurred in London and in Columbus, Ohio, and generally this would cover explosions of the different parts of the apparatus at the works, which is liable to occur.

311 The cost at the burner including depreciation and excluding interest I have figured to be 85.325c. per M c. f. of gas sold in Cedar Rapids.

(Plaintiff offers in evidence Exhibit No. 10, being the paper identified by the witness. The same is objected to as being incompetent because there is no basis upon which it is founded. It purports to be a calculation not predicated on any rule or principle that would permit it to be taken as a basis. Taken subject to objection.)

Before proceeding with the economic hazards, I will give the insurance reserve. I have not included that in my estimate for the reasons that I thought the court might prefer to have it set out in a table by itself in order that the returns on capital might be considered in connection with returns on capital invested in lands and mortgages. In my judgment 10 per cent. is the minimum amount

of return that the plaintiff should earn on its capital invested on the present value of the plant over and above the several items I have mentioned in Exhibit No. 10, and I base my judgment on the value of money loaned on land plus the cost of carrying the hazards to which the investment in gas property is subject, and from which the investment in land is wholly exempt. For example I base it upon such items as those for general liability in insuring for a pay roll such as plaintiff has covering liability for personal injury only, either to employés or the public. I am familiar with what it would cost to carry that kind of insurance. For that form of insurance the cost would be $17,346.00 per annum, for cyclone insurance, $300.00 per annum; for insurance for injuries from damages to property either as owner or property of the public, $8,623.00. These
312 are the sums that insurance companies would charge to carry this insurance, based upon the valuation of the company's assets, less any mortgage which a judgment creditor could not reach.

There are a good many insurance companies that do this kind of insurance. You can't get a company to take a total liability of more that $30,000 and they re-insure a part of that. I have talked with the agents who are constantly calling on me to insure against this liability for personal injuries and I invariably object to their contract, because I say that if I pay for insurance I want indemnity. Then I have asked them for a rate for which they would assume whatever liability we had and agree to pay for our loss whatever it might be, and indicated to them the value in the market of the assets of our company over our mortgage debt, or, in other words, indicated to them how much the loss might become and told them to take into consideration all the probabilities and all their experience, and then give me a rate. The rates made to me have been for liability to employés, $1.48 per $100.00, on the annual pay roll; for liability to the public, $5.50 per $100.00 of pay roll, the liability of the insurance company to be limited to the total of $30,000 for any one accident, and $10,000 for any one individual. In seeking to provide insurance of that character, I have asked them to give me a rate so that we could get concurrent insurance, so that our entire risk could be carried, and I have been informed by the special agents and general agents with whom I negotiated up to date, but have learned from them that I must take that matter up with the home office. So in order to carry the insurance on the valuation here, which I have assumed roughly to be $400,000, it would be necessary
313 to carry thirteen policies up to the limit with any insurance company. I could not find it was possible to get any lower rate on concurrent policies. And this insurance amounted, according to the rate I received in Cedar Rapids, to 28.5c. per M c. f. of gas sold.

For damages to property, I found it impossible to get any company that would insure that; they stated that they had all gone out of the business; so I have taken that at just one-half the rate charged for damages for personal injury. The cyclone insurance I have figured on the rate made at Dubuque and applied here. The general

liability insurance does not cover explosions, and the rate I have figured on that is what I was to obtain from insurance companies, based on the value of the company's property, less the mortgage debt. I am not giving these figures to show that it is actually practical for the company to expend this amount of money for insurance. I am giving it to show what it is worth to the investor to carry the hazard if he takes the estimate of seventeen competing insurance companies, assuming that men in business, who are daily competing for business, are fair judges of what it is worth. I am assuming that competition is the best test of what it is worth.

Among economic hazards may be considered competition from electricity, which is a very serious matter with us. I have not considered the effect of the new flame lamps upon gas lighting; the new helium lamp, which has enormously increased the efficiency of electricity and other electric incandescent lamps, all very much more economical, which are coming into vogue as competitors of gas lighting. These are electric competition, and a thousand and one things it involves, new things every day, new fads or some way of attacking our customers, and all of which is to the detriment of gas.

314 With reference to the political hazards. We have, for example, large expenses for injuries to our business, due to what is called raiders; we have had to contend against philanthropists on several occasions and have had long and bitter controversies with these gentlemen. We have expended a large amount of time and paid large amounts for printing, sending out circulars and letters, and every time we would meet the assertions of the "raiders" with facts and figures; and we have been put on three occasions to very large expense in resisting the class of people generally called raiders, and have been compelled on account of the expense sometimes to forego the compensation that the stockholders ought to have had; but we have always been successful in getting the facts first stated, and then understood, but have had to contend against an overwhelming adverse sentiment at the beginning, and this hazard has always affected our stock and franchise. The matter of other persons frequently asking for franchises for competing works are among the political hazards, and all these matters have a tendency to make the matter of putting capital into this kind of a plant more hazardous than there is in putting it into farm mortgages. A few years ago the value of the St. Joe plant was cut right in two by reason of rival concerns asking for a new franchise.

Then the plants are affected by starting of companies for equality of taxation, among different classes of enterprises. The exempting of certain factories. Under a campaign for equality, an enormous amount of work is being done in different states to secure inequality and get up an enlarged law for taxing property of public utilities and a different rule for taxing general property, or property in-

315 vested in other lines of business, and that is a hazard, for the reason that it is always championed by the men for equality, and when you ask for equality, you ask the people to apply the same rule to the public utility that you apply to property generally,

and you are refused. The investor takes that into account. Those are some of the political hazards and I have not endeavored to set down in dollars and cents any amount for them. I have simply indicated that at St. Joe, for instance, it cost the men there one-half the amount they had invested in the gas company. The Mutual Fuel Gas Company of Chicago, ten years ago, lost about three-fourths of its value, caused by damage suits on account of explosions. When I entered the service of the Dubuque company, there was something over seventeen miles of mains and the mains now left in service are something over 31¼ per cent. of the mains in service when I entered into the employ of the company.

Cross-examination:

I was nineteen years of age when I began working for the Key City Gas Company. Before I went with the company I had been collecting and keeping books and accounts on a steamboat on the Mississippi river. I have lived in Dubuque all my life, was born there. I have not been interested in any other gas plants except the Key City, Waterloo and Cedar Falls, except I was for a short time interested in the Peoples' Gas Light and Coke Company of Chicago, which is the company that Mr. Cowdery is vice president of. I never had stock or bonds in any other company. I have made valuations of other companies for bond houses and for prospective investors, and for companies I planned, but which were not finally organ-
316 ized. The only company I investigated for a bond house was at Monmouth, Illinois, in 1903. I think that company was making about 15,000,000 c. f. of gas per annum. I was engaged by the owner of the electrical plant in the same city and made my report to him. His syndicate purchased the gas plant from the company at the time I made my examination and they purchased it on my recommendation. I have no copy of that report with me. I don't know whether there is a copy of that report to be had or not; the man to whom I made the report may have it. I did not include in that report such matters as political and sociological hazards and such matters.

In making my report on the Monmouth plant I knew that the purchaser who was buying would rely on my judgment but he was a practical electric light man and knew as much about the hazards as I did. His name was W. J. Ferris, his business that of general sales agent for electric goods, and his business carried him into gas works every week. I believe the plant is owned by a syndicate at the present time.

I also examined the plant at Fort Dodge, Iowa. I paid no attention to their books but examined into the distribution and reported on that. I don't remember what that plant cost; I never had any figures on what it cost. I think they were sending out at that time about 12 million feet, but this is only a guess; that was in 1902. The Fort Dodge plant was a coal gas plant. I did not include in the report on this plant what it would cost to carry insurance, but I told them what the earnings might be over operating expenses and taxes. I did not give an analyzed report but gave them what I thought the

property would earn over operating expenses and taxes, and
317 my estimate included what it would cost to put the property in shape to supply that business. I think the consumption at Fort Dodge was about one thousand feet per capita and at Monmouth, I think it was about 2,000. This however, is a guess. I made a trip to Blue Island and Morgan Park for personal examination of the ground there, for a new company, in the year 1902. This examination was made for Johnson & Leavitt, bankers of Waterloo, but they did not build. I told Mr. Leavitt of the hazards they would have in a gas property and he considered that he would not take the risk. I may have told him about the depreciation but did not tell him about the hazards. I don't think I have examined any other plant for bond houses than those I have mentioned. I have sold stock in the company at Dubuque, and Waterloo, Iowa, but only those. I am financially interested only in the plant at Dubuque at the present time.

In preparing Exhibit No. 10, so far as the coal was concerned and a number of other items I have taken from the books of plaintiff, or the records of the Dubuque company. I see the report given to me from time to time, but did not go to the books but rarely. The cashier makes those reports from the books of the company. I am a director and stockholder and manager of the Dubuque plant. I will not produce the books of the Key City Gas Light Company from which my figures were taken, that they may be examined in this case or for the purpose of cross examination of myself on this statement, because the Dubuque Gas Light Company is not under investigation. I leave it to the court to judge whether he will believe me or not. I refuse to produce any of the books of the Dubuque company. The items in Exhibit No. 10 that were taken from the books of the Dubuque company, are manufacturing, labor,
318 salaries, labor on residuals, purifying material, water at works, sickness and disability of works employés, distribution labor and salaries, general expenses, legal expenses and taxes. Those are the only items that I have taken from the books of the company directly. A part of Exhibit No. 10 is from plaintiff's cost. I asked them if they would give me the actual coal consumption, cost of coal and actual returns from their residuals, and they gave me the auditor's report of these figures. I gave in my exhibit .26c. per M. c. f. of gas sold. Mr. Averill gave me those figures and I understood they were from an audit of the company's books. The repairs at the works as shown in Exhibit No. 10, was taken from my own experience as I have stated. So far as the cost per M. c. f. of gas sold, I used two items from the Cedar Rapids Company. Those were the cost of coal and price received for all residuals. For the item of bad debts I assumed an arbitrary figure, and assumed that it would be based on the discount and interest and not upon the net rate system. We have had experience with the net rate system at Dubuque. I imagine a gas company has the right to use such rules and regulations with regard to the collection of its bills, that unless they are paid by the 10th of the month it will be cut off without notice. We have lost something in Dubuque by having articles

stolen. We have lost some coal, but I don't think we lost any coke in that way. But in spite of all the care we take we lose tools. It is not the experience of gas works all over the country that coal in distillation will produce two-thirds its weight of coke. The plant at Dubuque is a well equipped plant, built new in 1903 and 1904. Of the old plant we have only the water gas house and contents left.

We put in seventy-two new retorts at the new plant, and they
319 are in benches of 9's, full depth. The old ones were used for filling on the streets. We sold some of the iron work but didn't use a bit of it. We took one of the old holders that had been in use for ten years and used it as the inner section of our relief holder at the new works. Prior to building the new works we had two holders, one of 50,000 and one of 100,000 capacity. The smaller was about thirty years old. We are still using it; the other we cannot use. We had two at the old works. One of them went to the new works and after putting on several new courses we used it as an inner section of the telescopic section of the new holder and the other stands there. If we get our holders full at the new works we can run some gas down there and put it in the old holder. It is reasonably safe for the present but we cannot use it long—it has been condemned for use in the new works, but not where it now stands. In my own estimation it will be out of use inside of twelve months. If we do not put any repairs on it, it may stand possibly for two years. I will say that it cost $12,000, if you desire me to give you a guess on the cost.

I suppose the holder without the tank would cost today perhaps $1,500. It is worth today its value for use in the property, not its value as junk. We are not using it oftener than once in six months. The sizes of the two holders at the new works are 200,000 c. f. and 300,000 c. f.

We have not taken any cast iron pipe out of the streets from the gas plant. There is about 3,100 feet of the old mains in use now. About four-fifths of the rest of the mains that were abandoned are in the ground and one-fifth has been removed, and for the most part it was used. Some of the larger sizes of pipe are still in the
320 ground and it would not pay to remove it because of the heavy expense, it being under paving. I think that 6-inch is the largest pipe that is still in the ground, and I would guess that there is a mile and a half of it in the ground; we also have a little five-inch in the ground, but how much I do not know. I would say there is something like thirteen or fourteen miles of mains in the ground now that have been abandoned, and about a mile and a half of that is six-inch pipe, about three or four miles of four inch, and probably half the remainder was two-inch and the balance three-inch, two and a half and smaller than two-inch. Of this pipe the 6-inch, 5-inch and 4-inch were cast iron pipe, also probably one-half of the three-inch. I said that under ordinary circumstances and conditions two per cent. depreciation was a fair estimate on cast iron gas pipe, and this is an estimate based upon my experience.

I can not say from my personal knowledge whether the physical

endurance of gas pipe is such that it will last only fifty years or longer, and I know that it is not indestructible in soil such as there is in Cedar Rapids. I have hauled cast iron pipe out three times in two years and found it wholly disintegrated. I have laid cast iron pipe twice in ten years and found it totally unfit for use. If you will allow me to take into consideration the natural life I will answer that I do not know how long cast iron pipe will last in soil such as that in Cedar Rapids. In placing the depreciation on cast iron pipe in Cedar Rapids it has some of the elements of uncertainty, but it has more of the elements of business experience than uncertainty and I have experience to base my estimate on. I know of cast iron pipe that has been laid in natural sandy soil that has depreciated in twenty-five years and if you mean by natural causes, from the force of nature, then it was by natural causes.

321 I would not set aside the two per cent. that I have estimated as the depreciation on the pipes because stockholders would have their money put into another fund than a reserve fund and I see no advantage in a reserve fund. I don't remember of a gas plant that has a reserve fund. I have testified that the earnings of gas plants and the depreciation and I would put the depreciation into the business. I would not expect this depreciation fund to earn ten per cent. to begin with. I would expect it to earn the same returns as all the capital invested in the plant. I have never investigated to see how long it would take that fund to duplicate the entire cost of iron pipe. It makes no practical difference what it is. I don't know that it would entirely duplicate the cast iron pipe in twenty years. I have figured up what the depreciation on the Cedar Rapids plant actually would be from actual results and on scientific principals.

Q. Who discovered the depreciation of the coke and coal shed?

A. Anybody could discover that. Anybody that went in there would have to spend $48.00 to keep that shed up. I think the judgment of depreciation on the wooden building is something that must be left to each individual who makes the examination. The most scientific principle that I know anything about is common sense. That is the only scientific principle that I know of.

Q. Who discovered the scientific principle of depreciation on the brick stable?

A. I don't know who discovered it. Any person who recognized the fact that depreciation is an incident. Depreciation is a matter of judgment, based on experience. Whether it is based on ex-

322 perience or scientific facts they, the men who estimate it, simply take their views of the matter and make their estimate on that. The depreciation on the old holder purchased thirty years ago, would depend somewhat on the material of which it was constructed, upon the design and upon the repairs it has had since. I saw the holder but did not make a critical examination of it. That estimate is based upon my experience. I don't know that if you figure depreciation on it at 2 per cent. I would be wiping out the entire value of that holder today, which Mr. Pratt placed at $5,000.

I don't know whether Mr. Pratt and I vary widely in our estimates as to depreciation on the holder, or not. I made my estimate on my experience. I placed my estimate on the cost of the holders at Dubuque. I have seen the holders come and go at Dubuque, and I placed it on their life. I understood that the leakage in Cedar Rapids was 8½ per cent, and I am figuring it down and making my estimate on the exact condition of the mains here. If the books showed that the leakage was twelve or thirteen per cent. I would then put depreciation on the distribution system. I include in the distribution system everything between the works and meters. I wouldn't put leakage in with the station depreciation. I saw nothing wrong with the station meter.

I did not dig down and examine any of the mains or any of the services; the leakage account told the whole story to me. The leakage in a new plant immediately after it is constructed is not greater than it is after the plant is a number of years old.

The basis of my depreciation is not that of new works; it is upon the buildings in their present condition. I did not take into
323 consideration the cost or the age of the building, but assumed it was in fair condition. I did not make any assumption as to the age of the buildings; I suspect I did not assume they were fifty years old. I didn't make any assumption as to how old the buildings were, but when you state the outside limit I had that in mind, that it could not be fifty years old. I do not know exactly how old any of the buildings are. I would guess that the stable is five years old. In making my estimate of depreciation on that, I didn't have in mind that it was five years old, but that it was in fair condition of repair and worth at the present time so much money, and I based the conclusion on that. I didn't use any age as a factor in making my calculation of the depreciation on the buildings. If I started with the assumption of all brand new buildings in such a case the estimate showing the depreciation may possibly be a trifle high. If the plant was absolutely new, we might have that for a reason for shading the depreciation slightly, but I am assuming here a first-class physical condition and I have placed that depreciation at $12,929.16. If the plant was entirely new, every building and every pipe was new, I might shade the depreciation just a trifle, possibly $900. This is a guess you understand, for I would need to go over these figures one by one and give you the correct basis then.

Q. Can you do it?

A. I don't want to. I had trouble enough getting this up. I don't want to work all next week. I could do it if I had nothing else to do. I am not going to do it unless I am commanded. I have given my guess as to what it would be. I think my figures on depreciation would be very much the same whether the plant was absolutely new or in its present condition.

324 I think I spoke of sociologic hazards and political hazards. I think I named the persons philanthropists. That was a Pickwickian term, used in this connection. I refer to that class of reformers who want to benefit the community very largely at the

expense of others as distinguished from Christian reformers who desire to make the sacrifice themselves for the benefit of the people.

In the sociological hazard we have the matter of the attitude of the community toward the company. I don't know how much we have paid attorneys to go up to the city council night after night and try to induce somebody to forget politics a minute and come down to the case in hand. We don't lobby. This lobbying is an intermittent institution. It is not maintained constantly, but it is one of the things you may be called upon to take into consideration, but I do not allow for it in my estimate.

It is twenty years ago since we paid anything and it is too long ago to remember much about it. At Cedar Falls I think our election expenses for the last election were $3,200.00. We didn't hire speakers; there were plenty of men who wanted to talk, but we hired the opera house two or three times and we polled every vote in town, and we paid a good deal to the newspapers, and we circularized every body in town. Our capital in Waterloo was $745,000, and the bonded debt was $150,000. I don't remember the number of miles of mains in Waterloo or the annual output. The first year we got in was about $8.00 for every M. c. f. of gas sold, that was before we capitalized any of these contingencies. I testified that the entire works at Waterloo were destroyed and replaced by new; by works I meant the station not all of the mains, though the down town mains were discarded also. I think I paid about $40,000 for
325 the old gas works and knew that the town had outgrown the system, and intended to build a new plant entirely and that there was no such value in the physical properties. I believed I was paying about half of the $40,000 for the franchise and the other half was for a lot of physical property. I got $20,000 out of the old physical properties, if we take into consideration the land that went with it. I think I got about $12,000 for the land. We also had some mains recently laid when I went there.

I am on a committee in the American Gas Institute for rate making and costs, but have never been on it for the purpose of making rates. The committee has nothing to do with the making of rates or with the regulating of rates, or to fix rates. It considers the elements that compose rates or the proper elements to be taken into consideration in making rates, and this may include the entire operation of the gas plant. The Institute has also a committee on the manufacturing and distribution of gas. I am not sure whether Mr. Averill and his son, Glenn, are members of the Institute or not. I would say they are. I don't believe Mr. Averill knew I was a member of that committee and I was not called here because I was a member of it. The elements that the committee would consider in rate making would be the cost of manufacture, cost of distribution, cost of insurance, and hazards carried by the business and their effect in increasing the ratio of capital needed to carry that on. The committee has not undertaken in any way or by any means or methods to influence the rates in any state or for any person; their work has been to investigate the elements that properly constitute the rates on which charges should be made. The committee never had a meeting. I

belong to no other gas institute or gas association with Mr.
326 Averill, whose object is the fixing of the rates for gas to the consumer. Mr. Averill and I are both members of the Iowa Gas Association.

I have testified that I estimated the cost of depreciation of gas pipe or mains at two per cent. I have treated it all as though it were new pipe.

And my estimate of depreciation on the apparatus is upon new apparatus. I think that the depreciation on cast iron pipe is largely from inadequacy and not from physical depreciation on the pipe. I take Mr. Pratt's estimate on the value of the coal storage building and have figured the depreciation at 3 per cent., and assume the building is new, for the purposes of this trial. I am assuming the building is worth today the amount opposite it in the schedule.

Q. To get at the value of that building today and assuming it has been in use fifty years, you would multiply $193.50 by twenty?

A. No, sir; not exactly. We take the average value and divide it by the life. I am assuming the building is worth today the amount set opposite it in the schedule. I am assuming further that the salvage of that building less the valuation here, $6,450, divided by 33⅓, the life, would leave a rate of about 3 per cent.

Q. We will assume that this is a new building to-day, assuming that it is worth $6,450.00. You say the depreciation is $193.50 a year?

A. Yes, sir.

A. That amount subtracted from the $6,450 would leave $2,480; that would be the value according to your estimate, twenty years from now.

327 A. Yes, the way I go at it. I am now assuming that it is a new building, and it would all depend on what has been put into it during this time. I have in my estimate assumed a rate in addition to repairs, the necessary repairs to keep it. The annual repairs. I did not make the calculation as to how much it would take annually to keep this building in repair. You have to assume as I did in this case a certain condition, not what the policy of the company has been. If the policy of the company was to take care of the repairs yearly, and kept this up every year as good as it was before, it would still become inadequate.

I think the explosion in Waterloo was in June, 1900. A Mr. Russell was injured and sued for and received a verdict for $9,000, and we compromised with him by giving him $4,500, and a contract for employment for twenty years; also paid our attorney fees and the court costs.

Q. You afterwards settled with Mr. Russell by paying $300 for the contract.

A. I did not. I don't know what the company did after I left. One of the allegations in Mr. Russell's claim was that we were negligent in the operation of the plant, and of course it would naturally follow from the verdict that the jury found we were negligent. The stock that was bought for 10c. on the dollar, was sold for 100c., but we had never paid any dividends for five years, but

the earnings had gone back into the company all the time. I think the capital stock was increased from $180,000 in 1888, to $345,000 in 1903. During the time I was president we were putting our money into the extending of the buildings and plant generally. At the time we sold the stock, we, the stockholders, paid about $68,000
328 of debts against the plant. All the extensions were paid by the gas company and when we turned over the plant, we did so under an agreement to turn it over free from all indebtedness and we had to pay these debts. The preferred stock issued while I was president of the company amounted to $175,000. This stock was paid for at par in cash at the time it was issued, and I had about $40,000 of this stock.

We had two special elections in Cedar Falls and they were both with reference to granting a franchise. I can't give the amount we paid our attorneys in Cedar Falls on account of election expense. We paid nothing to defeat Mr. Hemingway for mayor, only as we paid it for polling the city, going about to see who the voters were in the election for the franchise and all the election expense we paid out was to secure the franchise.

I have been building gas plants for several years. Since we started, prices of everything in the way of labor and materials that enter into the plants have increased substantially and we have reduced the price of gas under the circumstances of higher efficiency of the plant 25 cents, though everything has gone up. Everybody who works for the company is getting more wages, every consumer is paying less and the stock is not worth to the company any more than it was when we commenced, so that the consumer and the workmen have been the beneficiaries, and the only ones, of our increased efficiency. I think that if you will look about you will find that there are a great many gas companies, whose employés are getting more pay and the consumers getting cheaper gas and the stockholders are not getting any more.

I have refused to produce the books of my company because it is very inconvenient to do so.

329 Q. As president of the gas works you often receive statements from bond houses containing a description of gas plants.

A. Very many. I have never seen one in which the hazards I have enumerated appeared at all, or in which there was a description of the hazards. I think the Omaha plant sets aside a reserve fund of 10 per cent., and it is the only plant, except the Peoples' Gas Light Company. I never saw any such matter set out in any bond issue, or anything that indicated that a piece of gas pipe didn't last forever.

We pay out considerable for advertising. I think our advertising is from $1,500 to $1,800 a year and possibly $1,200 is paid out in newspaper advertising.

Q. You spoke about an expert from Cedar Rapids being over to Dubuque to fix insurance rates?

A. Yes; I think it was some representative from the office of

Henry Bennett, who is the man who makes the rates that insurance companies adopt.

I made the examination of the Monmouth, Illinois, plant about four years ago. We have a half million dollars of capital stock in the Key City Gas Company; we have about fifty miles of mains, three holders, very little water gas apparatus, eight benches of 9s, and manufacture mostly coal gas. I think the stock in Dubuque cost the stockholders about par. I think the plant has cost the stockholders $670,000—every dollar of it. I can testify positively that for 18 years there has been not a dollar of stock issued for which cash wasn't paid into the treasury. I never issued a dollar of stock except for cash. We increased the capital stock when we re-
330 built about four years ago. We could not rebuild with the depreciation fund for we hadn't any depreciation fund.

Exhibit 10 that I have offered in evidence fixes the average depreciation on this plant at about 3¼ per cent. I figured the depreciation on the plant as it now stands. I mean that the life of each of the several parts of the works is about as I have indicated, but I haven't attempted to average the life of the entire plant. If the average of the separate parts of the works *are* about 3½ per cent., then of course the average life of the works is about thirty-five years. But in figuring on the value I would take what it is worth today, just as I would take a stock of goods. What I mean is that the life of each of these parts of the plant is, in my judgment, what the rate of depreciation in this table will show; and I mean to arrive at the depreciation by taking the present value, less the estimated salvage value, divided by the useful life in years. I have stated that the coke shed depreciation is 4 per cent. and in the case of the coke shed the average life would be 25 years. On the retort house I have figured the depreciation at 5 per cent. and the average life of the building would be 20 years.

Q. And you have enumerated the sum of these years as a sum of average depreciation?

A. Yes, sir. In fixing my estimate of depreciation on these things I have taken into account the salvage value, in every instance, and assuming that the average of my depreciation on the whole plant, shows that it 3½ per cent. I would mean by that that the average life of the whole plant is 35¼ years.

Q. Then assuming the plant has been in use 17 years, half of its value has been removed hasn't it?

331 A. No, not as I am figuring it. I am taking the structures as they now are and considering what the depreciation would be if they were new. I took the schedule for values and not for the rate. I took Colonel Pratt's valuations and treated them as though they were in first-class physical condition or as though they were new, and not that they were sixteen or twenty or any other number of years old. Having assumed that these valuations are the same as that of new property, and if as a matter of fact, this property has been in use for sixteen years, I see no reason to suppose that the values as placed by Mr. Pratt are too high. I haven't estimated the future life of each of these structures for its present condition was not

so, that I could form a judgment on that point. I haven't said that these figures here are for new buildings; I haven't assumed that they are. As far as I can say is that I would take the same rate of depreciation as I would for new buildings and new mains.

I know the cost of new holders and about what the buildings would cost and what new pipe and the materials generally would cost. I can't say that my depreciation is too high unless the valuation placed upon the property by Mr. Pratt is too high. If that valuation is wrong then the rate based on it is wrong. The only works I have studied on depreciation are those issued by the Society of Gas Lighting. I have read Profs. Bissell and Ames, and have studied Prof. Aden's depreciation rates and frequently consulted Cutter.

Q. You consider yourself an authority on gas depreciation?

A. I do. It is the place of an accountant to take the testimony of an engineer on the matter of depreciation. I don't know
332 that a public accountant, before he can be chartered as a public accountant must have a minute and correct knowledge of the things of that kind and must be expert in such investigation. If the matter of depreciation concerns an industrial concern, it is necessary for him to have the testimony and advice of persons versed in such property, his own record is useless unless he has the advice and direction of a gas engineer. I heard Mr. Cowdery testify that he would not estimate the yearly depreciation on a plant. I think his experience is not as good as mine; he has not had the opportunity to know the life of a plant as I have.

Q. Now you spoke about a rule for taxation?

A. There is one rule for taxing public utilities and a different rule for taxing property generally. The policy has been to make public utilities generally liable for taxation on the full value of their property, which is not applied to property generally. If the plaintiff's property is assessed as other companies are assessed then there is no discrimination. I think there should be only one rule for all; whatever rule is applied *and* it should be applied to all cases. If the bonds are owned in Cedar Rapids and never turned in for taxation, and the owner also has property in the gas plant, and refuses to pay on what is represented by the bond and plant, then I would think him unfair.

Q. Don't you know there is not one in a million assessors that know the value of property like this?

A. I never knew a million assessors, but they come pretty near knowing what property is worth.

I think there is very little variation in the promptness with which the people pay their gas bills, in various places where the
333 discount system prevails. I cannot testify with reference to the promptness in case of electric light and water, but I know about gas bills where the discount policy prevails and where it does not. I consider the most practical inducement that gas companies could hold out to secure prompt payment of their bills is the allowance of discount. There are other inducements, but I haven't found the most efficient means of securing prompt payment to be

a notice that the gas will be turned off at such a date. I don't think such a rule would work very well; it would result in loss to the gas company. I think a discount of 10 per cent. is sufficient without further reduction. I think that discount brings in all the money but about one-fourth of one per cent., and that 97 per cent. is in by the 10th of the month.

If we don't get it on the tenth we serve notice and execute the penalty.

Q. How do you explain how gas costs so much in the holder, when in Cincinnati they are selling gas at 50c. and making a big profit.

A. I don't know what Cincinnati pays out to put gas in the holder, but they can make gas very much cheaper than we do here. I presume coal doesn't cost more than half as much as it does here. Coal costs $1.25 to $1.35 at the mines, but I don't believe coke is worth twice as much here as it is there. I don't know what they are selling gas for in Hamilton, Ohio, but it is a by-product there.

I don't believe the Cedar Rapids company can furnish one hundred million c. f. of gas as cheap as the Milwaukee plant can furnish many times that amount with many more miles of mains and cheaper coal and freight, and the item of depreciation
334 cheaper, but if you compare it with Madison it is a different matter. Racine, Wis., is one of the McMillan plants and gets coal at least $1.65 a ton less than Cedar Rapids and is very well situated for fuel and all its by-products are at a high price as compared with the price at Cedar Rapids. Part of the gas at Racine is sold at 80c. and part at more, and I think they get an average price of $1.00, and make it much cheaper than it would be possible to make it in Cedar Rapids.

The explosion mentioned by me as occurring in London was in an early day. I don't think of any company in Iowa that has had an explosion in the last year. There was an explosion in the gas works at Chattanooga last month; the first one destroyed property of the value of $15,000 and killed one man.

I think the average gas company gives about 6 per cent. on its mortgages—on money raised by mortgage. The interest on our bond issue is 5 per cent. If the McMillan syndicate is able to float its bonds at 3½ per cent. I don't believe anybody knows it outside of Carroll Wright and the syndicate.

My item of 26c. per M c. f. for coke, as stated in my estimate was taken from the figures that I understood to be the audit of the company.

(Defendant- moved to strike out all the testimony of this witness with reference to 26c. per M c. f. of gas sold and to strike it from Exhibit 10 because it is shown that it was taken from the audit of the company and plaintiff has refused to produce the audit. Motion denied; *plaintiff* excepts.

Q. Do you still refuse to produce the books of the Dubuque company?

335 A. Yes, I do.

Q. Take the items that were testified to on Exhibit No. 10. What, if any, were taken from your books at Dubuque?

A. The first, "Distribution labor and salaries; general expe and I think legal expense is also. Bad debts is an estimate. Ta and advertising was what our books showed, and I would judge is what it would be in Cedar Rapids. I took the boiler insura from the rates and from our records. Distribution tools and ap ances is an estimate, as is also repair of mains and repairs of servi also repairs of meters and reserve for depreciation.

Redirect examination:

The several items in Exhibit No. 10 represent my judgment opinion of the proper charge for gas in Cedar Rapids. They h been made up from my experience and are based on my judgm from my experience for the past twenty-five years. I asked for figures of plaintiff to show how much they had paid out for c how much they had received for residuals and they handed me list, which I understood them to say is their audit. I subtrac one-half the price of the coal as representing the return received fr residuals, because it was a larger return for residuals than I myself, and this was done as a basis upon which to compute cost of the coal to make a M c. f. gas. I took the price of coal \$4.62 from the audit.

The items of labor and salaries, labor on residuals and purifying are taken from my own experience in Dubuque and my
336 knowledge of the gas business and so on through the other items I have named. Exhibit No. 10 shows my judgment and opinion of what it costs to manufacture and distribute gas in Cedar Rapids, even independent of my books in Dubuque, and it does not include any interest on the investment, but simply includes the cost of manufacture and distribution and depreciation on the physical property.

I mentioned in my direct examination the term insurance reserve. I have made an analysis of that particular item of the cost of manufacturing and have included that analysis in the paper marked Exhibit No. 11, but this is for the operating department only, not including mains and shop work.

The first item in the exhibit is the rate of the insurance companies indemnifying for liability from personal injury. The rate is \$1.48 for employers' liability and I am taking the lowest rate quoted to me by insurance companies, which was the Fidelity and Indemnity Company, as is the rate for \$100.00 annual pay roll, and is for indemnity against judgment for injuries to employés, and provides that the injury does not exceed \$10,000 for one person and \$30,000 for one accident. For public liability the rate made me was \$5.55 per annum for \$100.00 pay roll, and the general liability was \$7.03 on same basis as the others. In this exhibit I have estimated the value of the plaintiff's property to be \$400,000 exclusive of bonds.

These rates are based on the lowest actual figures received from

any company issuing risks of this character. I had this matter up with three companies in Dubuque, the companies represented by McGregor agents, the company represented by the Kretchmeyer agents and the Fidelity and Indemnity Company, and companies represented by Cook & Robinson.

337 The general liability insurance is figured upon the basis of coal gas manufactured. If water gas be manufactured the pay roll would be less, manufacturing and distribution assumed to be 14c. per M c. f. of gas sold. By damage to property I mean, for example, if we have a leak and start a fire and it causes an explosion, or an open ditch in the street and somebody comes along and has an accident, or any kind of damage that may happen to property.

Q. What do you say as to this insurance reserve being a necessary element to be taken into account in estimating the cost of manufacturing and distributing gas.

A. My experience in Dubuque, Waterloo and Cedar Falls satisfies me that it is absolutely necessary to take into account these hazards in conducting the gas business and in figuring on cost of service. The company has either got to pay out the money for the insurance or its stockholders have got to carry it for the company. It is not possible to have the plant carry the insurance—the companies do carry a limited amount of insurance but it is not possible for them to carry an adequate insurance.

From my knowledge of the subject I would say that they do insure from one-twentieth to one-seventy-fifth of their liability; the other nineteen-twentieths or seventy-four-seventy-fifths they carry themselves. I think the Cedar Rapids company would be justified in carrying general insurance as well as insurance on the buildings; it would be a business-like thing to do, and it would be a proper thing to charge against the cost of manufacturing and distributing gas just the same as the cost of coal. In my judgment if a gas company would attempt to turn off gas every time that a

338 party failed to pay on the first of the month they would have a continual riot with their patrons. You could charge up against the patrons the cost of turning off the gas and reconnecting it, but it would cost too much. You would have your fixed charges and interest and they would go on whether you sold gas or not.

In my judgment based on my experience, it is not practical to run the gas business without providing a discount for the prompt payment of bills. I had to abandon any other method of collecting because of money lost. It was too expensive. When we began we were losing 7c. per M c. f. sold. When we had money outstanding we would take the bills out and they would tell us to come again, and we would have to go again and it cost us about 7c. per M c. f. of gas sold, and that was reduced by putting in the discount feature. You would not get nearly as prompt payment, in my judgment, and from my experience, if you would adopt what is termed the turn-off policy as you would to give a discount and you would offend a large portion of your customers, you would lose very much more in bills than you do at present, but that would not be the largest

loss. You would lose a large volume of business. In the first years of my experience it cost about 7c. per M c. f. of gas sold to collect the bills—for coke and gas bills.

(The plaintiff now offers in evidence the statement which the witness just testified from, which is marked Exhibit No. 11, which is objected to as not being the best evidence and is incompetent, irrelevant and immaterial for any purpose in this case. Taken subject to objection.)

I have prepared a schedule showing the factors in the cost of gas which is marked

339 EXHIBIT NO. 12.

The factors in the cost of gas are:

(1) The cost of manufacture and distribution.

(2) The cost of maintaining the means and the methods by which manufacture and distribution are effected.

Into the latter division fall depreciation on the physical property employed in the service; interest on investment employed in the service; *interest on the investment employed in the service;* and the cost or reasonable worth of the protection to which that investment is entitled against the hazards, physical, economic, political or social, and other-, to which it is exposed.

Evoluting and computing these several factors and dividing their total by the volume of gas sold gives a proper basis for estimating cost per unit volume sold.

(3) To cost calculated as above stated, a liberal public policy will add a profit to reward the foresight, experience, skill, enterprise and energy expended in establishing and extending the business.

The factors of depreciation are:

(1) Obsolescence.

(2) Inadequacy.

(3) Physical decay.

Depreciation on buildings may be due to one, two or all three factors.

So also depreciation on machinery and apparatus.

340 Inadequacy is the chief factor in the depreciation of cast iron mains.

Causes of depreciation and repairs of cast iron mains—Defective Joints, Breaks, Electrolysis, Traps, Corrosion.

Chief factors in depreciation and repairs of service pipe—Inadequacy, Traps, Corrosion, Electrolysis, Bad Joints.

Factors of depreciation and repairs of meters—Corrosion of Valves, Valve Seats and Metal Parts, Saponification, Splitting and Stiffening of Diaphragms.

Factors of depreciation and repairs charged to depreciation—Gas Arc Lamps.

Charged to repairs—Obsolescence, Breakage Glassware, Corrosion of Parts, Lost Parts.

Hazards—Physical, Economic, Social.

Physical Hazards—Injuries to person, Damages to Property, Explosions, Fires, Winds and Cyclones, Floods.

Economic Hazards—Electrical Lighting, Electric Power, Electric Cooking and Heating and Industrial and Domestic Devices. Natural Gas, Gasolene, Crude Oil.

Political hazards—Contingencies of Franchise Renewals, Granting of Franchises to Rivals, Taxation of Rates, Policy of State.

Also a schedule of insurance reserve which is marked

341 EXHIBIT No. 11.

Insurance Reserve—Coal Gas.

Estimate of Geo. McLean.

Liability for Personal Injuries Only.

Insurance Company's Rates:

For Employers' Liability	$1.48
For Public Liability	5.53
General Liability, per annum	$7.03

Per $100.00 of annual Pay Roll. These rates being for indemnity of $10,000.00 for injuries to one person, or $30,000 indemnity for one accident.

Pay Roll, as per Geo. McLean's estimate on Coal Gas:

Mfg. Labor and Salaries	14.78
Labor on Residuals	2.086
Distribution Labor and Salaries	9.023
Per M cu. ft. sold	25.889c.

Value of Property of Cedar Rapids Gas Light Co., assumed, for the purpose of this estimate, to be	$475,000.00
Mortgage Debt	75,000.00
Value to be protected	$400,000.00

$400,000.00—13 1/3 times $30,000.00; therefore 13 1/3 policies costing, it is assumed, 13 1/3 times $7.03 or $93.73, per annum per $100.00 of annual pay roll are required. That is to say, the insurance cost 93.73 per cent of the pay roll.

342 Labor Cost of the gas, per M cu. ft. sold..... 25.889 cents
25.889 x 93.73, per M cu. ft. sold..... 24.266 cents

1,000

This to insure against judgments for injuries to persons, only.

General Liability Insurance.

On water Gas. Pay Rolls for both manufacture and distribution assumed to be 14c. per M cu. ft. sold and Insurance Cost, 13c. per M cu. ft. sold.

Insurance Reserve, Coal Gas.

Estimate.

	Cents.
Cost per M c. f. sold for general liability ins.....	24.266
Cost per M cu. ft. sold for Damages to Property Ins.....	6.5
Cost per M cu. ft. sold for Cyclone Insurance.....	.3
Total per M cu. ft. Coal Gas sold.....	31.066c

Insurance Reserve, Water Gas.

Estimated.

	Cents per M.
Cost per M c. f. sold for general insurance.....	13c.
Cost per M c. f. sold for damages to property ins.....	6.5c.
Cost per M c. f. sold for cyclone insurance.....	.3c.
Total per M c. f. water gas sold.....	19.8c.

343 One-half Coal Gas and One-half Water Gas.

Coal gas at...31.066
Water gas at..19.8

Mixed gas....50.866 divided by 2 equals 25.433

1.000c. per M c. f. sold.

Q. You may explain fully what you mean by obsolescence as applied to depreciation?

A. I apply obsolescence to any building, machinery or apparatus which is used, and in the use has become inefficient or uneconomic by comparison with more modern apparatus and which may be too expensive to operate even though it be physically perfect, there are such advancements in the construction of machinery, and a continual effort on the part of engineers to make machinery and apparatus that will be more efficient than that which is being used.

I may illustrate obsolescence by beginning at the first stage of gas manufacture, the retort at Dubuque they have passed from the cast iron retorts to the clay retorts. They had clay retorts when I began in the business set over free fire furnaces. That is the bench fuel was burned and carbonized down as fuel burned under a boiler or in a stove. Then the regenerative bench and later an improved set of these benches until the present type of bench was evolved

and installed, and further improvements for increasing the efficiency of carbonization are in progress and have been installed in
344 some particular works—that is these means have been particularly successful when applied to works of a very large type and efforts are being made constantly to improve these means and to make them adoptable to smaller works—the free fire benches such as I saw here when I first visited Cedar Rapids, are entirely out of date and they consume such a large part of the coke produced that they would be too expensive for present date service price. In other words any free fire bench is at the present time obsolete and should be abandoned.

In my judgment and experience it is absolutely necessary to take these factors into consideration in the operation and management of a gas plant and the price received for gas should be such as to enable the company to take this into consideration.

By "Inadequacy" if used progressively, would begin with the land and it would extend to the land and to the buildings. I have had to demolish buildings solely on account of their inadequacy. I took notice of the machinery at the station and of the amount of land that the works stand on and I have in mind an idea of the space around the buildings and the yard room and in my judgment the purchase and holding of this additional ground was a proper move on the part of the gas company. In fact I consider it would be culpable negligence to fail to make such a purchase, for the purpose of locating additional works as the plant shall grow.

Inadequacy may be applied to the machinery. The purifiers may possibly be in a perfect physical condition and still it might be necessary to replace them with others of a larger capacity. To purify gas, time contact is absolutely necessary. You may
345 have the most perfect design and construction and the most efficient material in the boxes and yet without adequate time contact the chemical purification is absolutely impossible, that is, the gas coming in contact with the oxide and remaining there a length of time enough to perfect the combination. Capacity in the box therefore essential to time contact, if the purifier box is too small it must be replaced by a larger one.

The item of inadequacy may be applied to all machinery and apparatus of the plant. There is a relative size of all the piping and connections at a plant for a given flow, that is it may be a 12 inch or 16 inch plant, and these connections may become inadequate and particularly in the instance of water gas apparatus. For instance if the off-take pipe should be smaller than it ought to be there will be an increase in the cost of making water gas.

Coming to the depreciation of the cast iron mains, the chief factor is that of inadequacy in my experience and knowledge of the operation of gas works. This is so because it is impossible to for-see for a long period in advance, the demand for gas in a particular section or district. In fact those demands are subject to change and variation. Since I came into this case I have relaid 535 feet of mains on South East Avenue in Dubuque. A man put in two tin furnaces, and we found by running the 2 inch service pipe into the building

that we could not give him enough gas, and I had to go back to the starting point where we had a 6-inch main and extend the 6-inch main and abandon 235 feet of two inch and 300 feet of three inch pipe, and they now lay there, this being a street where there is very little gas used, we could not take up the two inch pipe without it costing us more than it is worth for the street is paved with
346 hard macadam. Since this case begun we have put in 5,115 feet of mains simply on account of inadequacy of the mains laid there ten years ago last summer. There was a customer at the end of the main for a seventy-five horse power gas engine. We had to run a 3 inch pipe about 300 feet, but it would not supply it and we had to then go back 5,115 feet and bring up the 6 inch main to connect with the three inch that we had run and we connected our old services with the new main and abandoned the old main. The cost of getting out the old pipe would exceed its value twice over.

From my experience and my knowledge and study of the operation of gas works, I would have to say that the percentage of depreciation of cast iron pipe per year on account of inadequacy is more than two per cent and that I could not from all my experience get it down to less than 2 per cent and it has been more, though I have figured it at 2 per cent. in my estimate on depreciation and it would be necessary to figure on at least 2 per cent. depreciation of the pipes of the distributive system on account of inadequacy, and that the company would have to relay fully that much each year because of the pipes becoming inadequate for the demands for gas in some particular locality. Of course the rate at which the business of the company is expanding is one factor in estimating the loss due to inadequacy.

It is not possible for the company to anticipate the needs and probable demands for gas for any particular part of a town, for ten or fifteen years in advance. I would say that such estimates would go beyond the limits of human foresight.

With reference to electrolysis my most notable experience
347 was the laying of mains three times in two years on account of it, and the effect of electrolysis both on cast iron and wrought iron mains in service. I have taken in one case a pipe drip-box sunk in the ground beneath the level of the main to receive the drainage from the main, usually made of cast iron, and have taken pieces of it and whittled it as I would whittle a piece of oak wood, the character of the iron being changed and metamorphosed from the action of electrolysis. In another instance in Dubuque, our men were prevented for two hours from making connections of the pipes because of the current of electricity going through the main and causing a shock, and there was another instance of the same kind of a job by the flashing at the joint and setting fire at the torch.

Take a plant like that at Cedar Rapids, where there is an electric street railway system of approximately twelve miles of track which parallel the mains of the gas company the question of electrolysis should be taken into consideration in estimating the proper

life of the distribution system. It must be considered and there is every probability that it will be a factor in the destruction of the mains; and my answer is based upon my experience and from handling the mains affected by it.

I have had to apply the factor of inadequacy to service pipes twice in the last week. We have two residents who have installed automatic gas water heaters; those are devices that consume large quantities of gas for a short period of work. Whenever they turn on the water the gas is automatically lighted and the lights all over the house turned on. The two, the extension of gas in the building, and the addition of gas consuming devices, very frequently call for enlarged service pipes in the building.

348 If the grade of the street is lowered it usually means that you will have to relay your mains, unless you knew at the time the mains were laid that there might be such a change in the grade and laid the mains accordingly. I don't think it absolutely necessary to have the pipes below the frost line, but it is better to have them so. The relaying would apply to service pipe as well as to the general distribution system.

By corrosion as applied to service pipe, I mean oxidation and the doing away of the pipe by rust. Sometimes it is the effect of acid, very frequently it is the effect of the soil on the pipe. By the term saponification I mean forming into soap. Whenever you put acid and an alkali together you make soap. Now in the meters any alkali, like ammonia, small particles of which pass out of the gas, any acid in connection with that makes soap and that injures the meter and is one of the chief causes of the destruction of the diaphragms of the meters, some of the other things that affect the meters are stiffening of the diaphragms, which causes splitting. The diaphragms are made of leather and some preparation.

Among the political hazards which I have designated in my analysis are the contingencies of franchise renewal. I think it highly necessary to take it into consideration. If you are unsuccessful in obtaining a renewal your property is destroyed entirely and your investment, except for salvage value.

Plaintiff offers in evidence Exhibit No. 12, and the same received subject to objections.

Q. From your study and knowledge and experience in the 349 operation of gas plants, and in the manufacture of gas, what do you say as to the probability of the cost of making gas being cheaper in the past five years.

A. I can't see any probability that it can be cheapened. There is no reasonable hope that the cost in the holder will be reduced and if any cheapening of gas at the burner is to be accomplished it must be secured wholly through reducing the depreciation and that cannot be substantially reduced unless the volume of sales per mile of mains and per capita and meter can be substantially increased. Applying that to Cedar Rapids I don't see how it can be reasonably expected that the volume of sales per capita can be very much increased, because Cedar Rapids is selling more gas per capita than

I have been able to sell in Dubuque and it has had up to date less competition than I have had to meet, and if there is to be any change in the attitude of competition I think it is wholly unreasonable to expect it to be less aggressive but we may expect it will be more severe, because of electric companies and of more conservative competition elsewhere. Our sales in Dubuque are larger per meter than those in Cedar Rapids but our sales per capita are not so large, which indicates that they have extended the use of gas to a larger number of persons but that the gas company has probably been getting the smaller consumers and the electric light company the larger ones. Again there has been, in recent years, a great many improvements in the electric lighting system and also a cheapening in electric lighting by reason of inventions in different kinds of lamps and there is a very high efficiency in electric lamps, and it seems to me the effect of that will be to increase the difficulties very largely of the plaintiff to get large consumers for lighting, and of holding those they have. In Dubuque we do not furnish any gas for
350 street lighting but do furnish some to the city buildings. Up to November 12th, this year, we had furnished the city 11,152,000 cubic feet, which included lighting of city buildings and city hall.

The purposes of the American Gas Institute are the investigation of means and methods of improving the efficiency, construction and operation of gas works and of extending the use of gas, means of extending the use of the service. The scope of the duties of the committee to which I belong is to investigate the factors which are to be considered in ascertaining the cost to the company of the gas they make themselves and of seeking to find some method of applying those costs to rate schedules that were practical and yet prevent the advance thereof. The main object of their inquiry was to consider whether the equitable rates required that each person should pay the cost of service according to some plan of "Ready to Serve," or whether a uniform rate should be applied and considered practical. The equitable basis I might say would mean that the demand of each particular customer were to be considered and investigated for that particular customer for that portion of the investment in the works and mains generally; then the fixed charges belong to the charge for gas used and the questions considered were which kind of rate was the most practical. We had absolutely nothing to do with attempting to estimate the rates for any company or companies and had absolutely nothing to do with attempting to hold up the rates of gas companies. Its inquiries were both academic and practical; it was attempting to make a practical investigation of the cost and to give expression of the result in the form of a practical set of charts. I positively know that there is no organization among gas men,
351 the purpose of which is to keep up the rates that are to be charged consumers generally. The American Institute maintains a school for the education of young men in gas engineering, in fact for the education of men, young or old, interested in gas engineering, apprentices, clerks or anyone connected with the work. The expense of the school in a small part are paid by the Institute,

largely by the members. For example, I am a contributor and my company is a contributor. It furnishes education for young men who care to avail themselves of it. The education is given free to those young men. There is no suggestion, no dream of such a thing as keeping up rates. The headquarters are at 168 Elm street, New York City.

I think I can give the relative cost of the manufacture of gas in Cedar Rapids and in Milwaukee, that is, the relative cost in the holder. I think that it would be about 24c. per M. c. f. less in Milwaukee than in Cedar Rapids, because of so much lower net cost of coal and labor in Milwaukee. Milwaukee operates extensive machinery, which cannot be economically operated in a plant less than 40 benches, and which turns out as much work as is turned out in Cedar Rapids. I would think the difference in the item of coal and labor alone would not be less than 24c. per M c. f. lower than Cedar Rapids.

At Dubuque we get a net rate of $1.00 per M c. f., and $1.25 after the 10th of the month. All bills of less than $1.00 a month are considerable higher. Our rate for gas is based on the computation of a dollar's worth of consumption or over a month, and for a smaller quantity we get a higher rate so that we receive over $1.00
a thousand net for all gas sold. The rates in Madison are
352 higher than in Dubuque or Cedar Rapids, and that is one of
the McMillan companies, and are, I should say, 75 per cent. higher than they are in Milwaukee.

Q. You may explain why the gas companies are not able to secure a sufficient rate to carry all the insurance mentioned in your insurance schedule.

A. Because the traffic will not bear it. It is impossible to get a return on the investment in the gas business at the present and have the investment safe. The best you can possibly do is to invest your money for the current rates of return and carry most of the hazards yourself. The conditions of competition are the most favorable factors in bearing down your rate. For example, the ordinance in Dubuque permits us to charge a rate very much above what we do charge, but conditions won't permit it, and in spite of all the council may do, as long as competition is going so freely, it is a most invaluable regulator of rates, and where I have had anything to do with it, competition has regulated our rates and compelled us to take lower rates than we could take if we had to safeguard our investment while conducting the business. We find it impossible to safeguard the business investment and still get a return on it.

Cross-examination:

In making these comparisons between the cost of gas in these different places, I figured the cost of coal at Milwaukee at $2.90 per ton, and at Cedar Rapids $4.62 per ton, on the track, and figured that a ton of coal would make the same amount of gas in both places and about the same amount of by-products, with perhaps a little more coke in Milwaukee.

353 I did not figure or make my estimate by taking each article. My prices are based on the cost of coal figured with the residium. I didn't figure on the amount of coke received at each place or the amount received for coal tar at each place as a separate item, or the amount received for ammonia only as it affected the total residium. I did not manage the plant at Milwaukee, but I visited it frequently, and never employed machinery such as is used in Milwaukee, but have seen it in operation frequently.

My testimony the other day was to the effect that the cost of manufacturing and distributing gas was 85.325c. and I have since testified that the insurance should be added to that of 25.433c. to meet all hazards and one-half of 25.433c. for water gas. My item for bad debts was .0025 per M c. f., and I think I had an item for collection charges under the ordinance which is assailed, of 3½c., which should be added under that kind of a sale. And undoubtedly something should be added for the political and sociological hazards but it is difficult to value those and I have not been able to satisfy myself just what figure would be necessary to cover them. I don't feel able to value those hazards at the present time.

Q. At Cedar Falls to protect your own company against these philanthropists, you spent 25c. per M c. f. of gas sold?

A. Probably that much. I spent a total at Cedar Falls of about $3,200. I have had no experience in subsidizing newspapers. I said that 3c. would only be a fraction of the amount necessary to be allowed against those political, economic and sociologic hazards. I haven't followed out the hazards except to the extent of proving my belief that 3c. a thousand cubic feet would be insufficient

354 to cover them. I haven't been able to fix those hazards and fix the price satisfactorily to my own judgment. I am not prepared to pass judgment on whether 5c., 10c., 15c. or 20c. would cover it. I haven't considered rent, insurance, or any hazard except such as gas investments are subject to, but I would think that 1c. would cover the rent insurance.

Q. I now call your attention to the figures, "Value of property of plaintiff assumed for the purpose of this estimate (Exhibit No. 11) at $475,000, value of mortgage debt $75,000, value to be protected $400,000, where did you get the figures $475,000?"

A. In court here from casual notice of the testimony. That is approximately what the evidence shows, and I assume that for the purpose of illustration, and I assumed the figures $75,000, because there was a mortgage for that amount. There would be no reason to protest that for I assumed it would be ahead of a judgment for damages. I figured the total value of the plant at $475,000 for the purpose of this estimate on insurance. I am not prepared to say that the hazards could not be evaded if the property was entirely covered by mortgage; possibly it could be. I have stated that the costs of gas in Cedar Rapids on my estimate would be 85.325c. Then there is the hazard of insurance which would cost 25.433c.; and under this ordinance the cost of collection would be 3.5c., and I don't think 15c. would more than cover the political, sociologic and economic hazards, and rent insurance would possibly be 1c., and

if you carry indemnity on the full value of the plant you would add 3c. more. And I believe these matters should be considered when you go to compute what it actually costs to manufacture and
355 distribute gas in this state, and when it comes to fixing a rate in Cedar Rapids I believe all these factors should be considered and given weight.

Q. You think as a fair-minded man and an expert that if the gas plant at Cedar Rapids was constructed out of the bond issue of $75,000, and all of the additions to the plant had been made by charging the consumer a rate which would pay the interest on these bonds and make all repairs, build all renewals and at the same time pay the stockholders for a period of 15 years, 8 per cent. of $12,000 a year, the court should, in fixing a rate, that these facts should be disregarded and that the court should base its findings upon these factors that you have testified to?

A. I think that everything should be absolutely disregarded except a fair present value of the property employed in the service. I think that this is the only basis from which a calculation should be made.

Q. Which would have gas cost near $1.50?

A. I would think close to it, to make a safe investment. We are permitted in Dubuque to charge $2.00 and $1.50 to the city.

R. A. Wallace.

The plaintiff then produced the witness R. A. Wallace, who being first duly sworn testified as follows:

My business is that of general contractor; I have been a contractor since 1884, and have been in the building business since 1871 in the city of Cedar Rapids—in the general contracting business, including brick and wood and all kinds of buildings. I have been in the business continuously. I have made a study of the business
356 of building brick buildings and other buildings of all characters.

I have examined the buildings of the Cedar Rapids Gas Light Company recently. I originally did part of the work in constructing some of the buildings.

I have prepared an estimate of the present value of the buildings after making an examination of them, and have prepared a schedule of the values. This schedule was prepared about a week ago.

The first building I have, is called the shop building, Nos. 1 and 2, which I valued at $3,394.66. My detailed estimate of the value of what is known as the shop is:

Excavation, $45.00; stone walls, $299.20; brick placed $1,288.00; brick walls in the addition *to*, $288.00; foundation and extra excavation under the office, $238.70; roof over office, $63.56; ceiling over office, $27.70; plastering, $47.60; roof over shop, $427.40; doors and windows, $252.00; painting, $135.00; base and chair rail, $21.00. This is my estimate of the present value of the building.

The next building is the coal shed and the addition thereto. The detailed statement of which is: Foundation and pier blocks,

$234.00; floors, $351.00; side walls, $516.60; end walls, $118.36; steel beams in place, $432.00; roof, $992.94; strengthening rods and trusses, $240.00; total $2,884.98. This in my judgment is a fair and reasonable present value of the building.

Building No. 4, the retort house, I have in detail as follows: Excavation, $233.40; digging and concrete walls, $909.00; concrete or brick floors (they are part brick and part concrete), $122.60;
brick work, $2,118.48; steel trusses, $262.50; steel roof,
357 $619.20; beams that support the plates, $518.72; doors and windows, $125.00; stairs and wood floors, $44.00; iron floors, $1,377.60; plastering, $45.00; basement windows, $30.00; ventilators, $80.00; total $6,462.55. In my judgment the above is a fair and reasonable present value of that building.

The next building is the boiler room, which I have estimated the total value of at $775.40, and which is my judgment of the fair and reasonable present value of the building known as the boiler house.

The next I have marked meter room, office and condenser room, and I have designated it as 7, 8 and 9, there being three rooms included. For this I have estimated excavation, $85.50; stone work, $591.36; cement floors, $258.00; bases, $21.00; brick work, $1,746.00; roof, $612.48; cornices, $65.50; doors and windows, $222.00; ceiling of wood, $109.40; furring, $23.04; plastering, $66.50; painting, $125.00; extra brick work, $458.83; steps, $30.00; ventilator, $45.00. I desire to explain the extra brick. I figured the wall first as a 12-inch wall, but then plastering over a certain distance makes it extra for brick work. The excavation was for the trenches for the walls, and I think that item is kind of low.

I also have an item under No. 10 for roof over the scales, and another for brick paving underneath. The roof I have estimated at $172.08, and the brick paving at $504; the total of 7, 8 and 9 is $4,450.01.

The next building I estimated was the purifying room. The details of this building are: Excavation, $250.00; footing, $168.00; foundations, $1,612.80; pier foundations, $320.00; center foundations, $220.00; brick work, $1,624.00; concrete floors, $310.00;
vitrified wall coping, $30.00; lintels and beams, $35.00;
358 wood floors, $280.00; trusses, $150.00; ventilators, $80.00; roof ready for tar and gravel, $430.80; tar and gravel roof, $124.80; doors and windows, $346.00; steps, $18.00; painting, $55.00. Total for the present value of this building is $6,062.60.

The next item is the pump pit, which I have placed the present value at $237.91. It is a building in the ground, a brick building with a cement floor and a vestibule to go in, with doors and windows.

The next item is the coke shed, the detailed estimate of which is coke shed, $539.09; posts and trusses, $65.00; trusses proper, $50.00; roof ready for iron, $48.00; curtain walls, $90.71; corrugated iron, $269.28; painting, $15.00.

The detailed estimate I have of the barn is: 24x30x22 feet high; stone wall which acts as a retaining wall for the bank, $190.00; above wall brick work, $948.24; vitrified coping for the walls, $23.40; basement floor, $61.60; wood floors and roof complete above the

basement floors, $248.64; conductors and gutters, $18.00; stairs, $24.00; steel shoes and bands, $69.80; doors and windows, $130.00; painting, $15.00. Total for the present value of the barn, $1,728.68.

The 310 feet of fence I estimated at $240.00. The retaining walls I placed at $3,387.20, and is in my judgment and opinion the fair and reasonable present value of the retaining wall. The 200 feet of rip-rap I have placed at $450.00.

My valuation of the gas pipe about the buildings is just a matter of judgment. I made no estimate. It is just a matter of judg-
359 ment and estimating the value of the pipe put in every plant. I said it would cost from $500.00 up, and so I made an estimate of $500.00 on it. My best judgment is that it would run a good bit more than $500.00 for the lighting of the plant, and then they have pipe run for heating it too. That was gas pipe. I simply made my estimate of the value of the pipe for the whole building. It is hard to get at as they have a great deal more than is necessary in some places, but it would cost at least $500.00 to put the pipe around there.

I am acquainted with the different pieces of property upon which the gas works is located and a*n* acquainted with the present market value of that ground. I have had experience in the purchasing and selling of property in that vicinity to quite a large extent—$100,000 or more worth. I purchased the property on Second street and Ninth avenue, on Third street and in that neighborhood. I purchased all of the property on the westerly side of Second street from Ninth avenue to Fifth avenue, along about 1900. I have recently sold property in that vicinity also; that is, on the corner of Second street and Sixth avenue, and between Second and Third streets on Sixth avenue.

Q. What in your judgment is the land owned by the Cedar Rapids Gas Light company, located on the corner of Seventh avenue and First street worth?

Objected to by defendants for the reason that it appears that the plaintiff keeps a set of books in which is recorded the amount paid for these separate pieces of property and because in no case can the property be considered worth more than it cost. And by agreement this objection shall stand to all questions to this witness. Evidence taken subject to objection.

360 A. I value the corner lot at $6,000.00, and the four other lots in that block I value at $4,000.00 each. The corner lot in Fractional Block 10 I value at $4,000.00 and the lot next to it at $3,000.00. The five lots across the street in Block 9, I value at $20,000.00, which makes a total of $49,000.00, as the total value of the whole of the real estate, and in my judgment this a fair and reasonable value for this real estate. The valuation of the lots in Block 9 (the Annex), I made on the block complete, the entire thing, including buildings; the other lots upon which is located the gas plant, I estimated those lots simply and exclusively of the buildings. I had already made a detailed value of the buildings.

Cross-examination:

Q. Are you interested with Mr. Averill in any financial matters?

A. I own some stock in the Cedar Rapids hotel and he does also. I have a little stock in the Pawnee mills and a little stock in the telephone. I don't know whether he is interested in those or not. I understand he has been interested in that and is a director.

Q. What would it cost new for the shop building on what is called No. 1 and 2?

A. I didn't make an estimate of a new building. I made an estimate on these buildings as they stand. I made a unit figure of what the stone was worth, estimated in my mind what it was worth. There is a rule by which you determine the value of a building. I use a unit per foot, or yard, or whatever you please; that is the rule.

361 I could find out what it would cost to erect a new building. I don't know how old this building is. I valued the brick work at so much per thousand. New brick work is worth all the way from $12.00 to $13.00 a thousand. It takes 22 brick to the foot. I can't say how many brick I figured in the walls of the shop for I have not my detailed figures here, and I have not put the price of the brick down upon my schedule. I figured the value of the building in just the same way that a contractor would figure on a building. But I do know how many brick are in the building, for I figured it; that is a part of my trade. In arriving at the excavation I found out how much there was of it and I assumed how much it would cost. I had the amount of teams and the amount of money it would take to dig it out and I arrived at that result. I figured the labor at good wages. I figured that $45.00 would pay for the excavation under that shop; if it were in rock, of course, it would be more; but it was sandy soil along there. I could not tell you how many yards of excavation there was; I have nothing here but the conclusions I reached.

Q. Would a man and team excavate it in a day?

A. Perhaps a lawyer might, but couldn't. I have told the court exactly what I am going to tell it; that the excavation under that building is worth that much money.

Q. And you are not going to give us, on cross examination how much it cost a yard.

A. I am not going to give away my business; if you are not satisfied with it, you will have to be dissatisfied.

The stone wall I valued at $299.20. I have not given the number of feet in the schedule. The stone is ordinary Anamosa stone—good building stone. I have given the cost of the stone wall. I have only

362 this here; and this is the conclusion of the figures for this house. I was not figuring on what new walls would cost but what the present walls are worth. I gave my opinion as a builder of what they are worth. There is a rule in this city as to what cement floors are worth and each contractor has his price, but they get pretty close together; I would think within 15 or 20 per cent.

In our work we bid on all character of wood and brick work and excavation. No two of them are alike and it is a matter of judgment and experience with the builder as to what they are worth,

and that is the way that we arrive at prices. The brick walls are not worth the same price all of them, although of the same class and thickness. I did not in figuring these walls apply to them the cost of new walls, or what new walls are worth, but I did not make the estimate wholly without regard to new cost. My method of figuring is from the start with a unit. I never make a single schedule of the lumber. My price is based on the unit foot, whatever it may be. By using that unit all the time determines with sufficient accuracy each time. Just what the materials will be, also the labor, and is simply a unit by which you can determine what the building can be erected for. I do not decline to tell you what unit is; you may know the basis by which I calculated the values with respect to these buildings but I haven't got it here. I am willing to produce it if necessary.

Q. Did you use the rule which you say you use in building new buildings? Did you measure it up to find out how much materials were in it.

A. Yes, sir; I could give the amount of materials used in the shop, but my figures on that were left in my office. I don't know
363 from memory what the amount is, but I did when I put the figures down, and after I added all these figures up I arrived at these figures as for instance, so much for excavation and so much for walls, and I used that rule the same as if I was bidding on a new building, but I did not figure on the cost of a new building, and then deduct from that, but figured on what I believed the building worth as it stands. You know you can look a second hand building over and make an estimate of its value based on your experience as a builder without applying any fixed rule. I have estimated considerable for fire losses. If you are figuring on the cost or value of a building that has been destroyed by fire, you want to know about its age and the condition and the kind of material, and in making this estimate I took into consideration what the material was worth. I made an estimate on the present value of these buildings as they were.

You know the materials are not worth the same prices, nor the bricks worth the same, one with another, and one method of laying is worth more than another. That is, the estimate in the mind of a builder and in this case I took what I considered was an estimate of the value of the building. But I have not the number of yards of excavation here, or the depth of the excavation. I have no objection to producing the detailed figures of my estimate on these buildings; not a particle.

Q. You say you valued the lot located on corner of Seventh avenue and First street, how many feet deep did you figure it?

A. I figured it 140 feet deep and placed the value on the 140 feet. I did not assume the lot run to the river but that it was a lot
364 60 x 140 feet, and limited my valuation of $6,000.00 to a lot of that size, and on the next two lots I limited my valuation to a lot 60 x 140, and valued them at $4,000.00 each; and I valued the four lots at $4,000.00 each. And I was basing my valuation on all the lots being sixty by one hundred and forty feet. On the Annex I valued the land 300 x 140, and the buildings as a whole. I know

of lots that have sold in that vicinity for $4,000.00. They were my own lots and were improved some, but I reserved the improvements. They were sold to the Rock Island company, and it was when they were acquiring all property in the block, and they took all of the property in the two blocks. I sold one lot to the Rock Island Railway for $9,000.00, and reserved the improvements. I know of a sale lately of 30 feet for $3,000.00, just about a block from the gas works.

Q. The property down there is of little value except for railroad purposes?

A. That is not true. It is good for commercial purposes. You could locate any kind of wholesale house there; it is the best place in the city of Cedar Rapids; there is no place in the country so valuable for wholesale houses as that. These lots that I have valued at $20,000, I offered Mr. Averill $20,000 for six or seven years ago and he refused it. The property that has been sold for railroad purposes so far as I know, has averaged more than $60.00 a front foot, and the property I have sold and the property I have known of being sold this year, averaged more than $100.00 a front foot, and in one case $120.00 per front foot. The property is worth just as much as you can get for it, and they could get that much for it if they would sell it.

I don't know whether the two lots on which the big holder stands (lots 1 and 2, fractional block 10), sold within the last five
365 years for $1,500 each, but in my opinion they are now worth $4,000 and $3,000 respectively. Property in that neighborhood has increased in value in the last five years. According to the prices paid by the railway company it has increased 100 per cent.

The buildings on the Annex are very badly in decay and I did not consider them in making my estimate as of any particular value. I think they are not being used by the gas company for manufacture of gas. There is about 40 feet in width east of First street that is not covered with railway tracks and this is on the east side of the street.

J. C. Loomis.

The plaintiff then produced the witness J. C. Loomis who being first sworn testified on direct examination as follows:

I am a contractor and builder, and do all kinds of general contracting. I am a member of the firm of Loomis Brothers, which firm consist- of my brother and myself. The firm has been engaged in the business of contracting for seven years and prior to that time I was employed by A. H. Connor, a general contractor. The last six or seven years of that time I was in his office most of the time, and also looking after work outside.

During the time I was with Mr. Connor and the time I have been in business for myself, I have become familiar with the cost of brick and frame buildings in the city of Cedar Rapids and I am able to estimate the value of such buildings, and buildings that have been erected and are now standing.

I know the location of the plaintiff's plant, and have within a

week examined it for the purpose of making an estimate of
366 the present value of the buildings. I took the measurements of all the buildings and have prepared an estimate of the present values of these buildings and have those valuations with me.

The first building I have is the barn, which is 20 x 30, and three stories high. I have placed a total valuation on the—

Barn	$1,835.00
Machine shop	2,395.00
Retaining walls	2,889.60
Fence	210.00
Excavation under retaining wall	150.00
Water gas house	4,389.50
Coal shed	1,736.50
Coke shed	330.00
Purifying house	6,133.09
Shed over scales	97.28
Paving	375.00
Tool shed	50.00
Boiler house	443.50
Coal house at retort	145.08
Retort house	6,150.00
Office and meter room	3,527.00

In arriving at the value of the barn I took measurements of it and figured up the amount of materials there was in it and the figures are in my judgment a fair and reasonable present value of the barn, that is what I would build it for today new. I arrived at the amount of materials in the store room, machine shop and shed by taking the measurements. In figuring the fencing I depreciated it about 33⅓ per cent. and the value I have given it is its present value.

367 I estimated 2,132 cubic yards in the retaining wall and carried it out 30c per cubic foot, and in my judgment that is a fair and reasonable value for the retaining wall. In estimating $150.00 for excavating for the retaining wall I figured the retaining wall on the river side 78 feet long, 16 feet high and 4 feet wide at the bottom and three feet at the top, and that it was down in the ground four feet. The north wall, I figured 24 feet long and 16 feet high, and the same thickness as the other, and the balance of 50 feet for where it tapers up. I figured four feet was under ground and 16 feet high where it goes down to where the wall is the same height all the way around.

I did not include the concrete floor with the coke shed. I omitted that, if there is one there. The paving I estimated at 250 yards at $1.50 a yard. This paving is about the purifying house and around the scales. It is all the paving I have on my schedule.

The tool shed is 10x12 by 8 feet high, roof and both sides and board floor, I estimated at $50.00.

I made the present total value of the building $32,304.00; but in this I have included meter pipe and plumbing and gas pipe which I have valued at $1,000.00, which are estimated in a general way.

There is quite a good deal of it there. I also have an estimate of $600.00 for rip-rapping.

Cross-examination:

Here I am not able to state when the barn was built; I have only an idea when; I can give no date, and I figured it at what
368 I would place a building down there today for, or a new building of similar character, and on using new materials throughout. I supposed the buildings, a good many of them were built a good many years ago. I would not say whether the wood work on the barn had been painted since it was built or not, but I believe the wood work on the brick building has been painted since built.

By shop building I mean the store room, machine shop and shed. I don't know when they were built, but I think it is one of the oldest buildings on the ground—it looks that way to me; it has been there ever since I can remember. I have been in town thirty years, but as to whether my memory goes back that far I can't tell. I figured the masonry work on that particular building at 23c. I do not know that masons have been putting such work in at 18c. I have put in many a thousand feet and never put in any at that money. The stone costs me about 8c. on the cars. The sand and lime would cost 2½c. or 3c. and we pay masons for laying stone $4.50 per day, and a mason will lay perhaps from 60 to 75 feet a day. I have employed stone masons for many years and I don't get 75 feet laid a day at wages of $4.50.

Ordinary labor costs from $1.50 to $2.00 per day, and one man will about tend one mason, with one mortar man for four or five masons and I think stone work is worth 22c. a foot. I examined the walls of the last building I have mentioned and found them in pretty fair condition.

I figured the brick work at $12.00 a thousand wall measure. In the store room I have an item of $195.00 for doors and windows. There are 18 windows 18x38, four lights. I can't tell you what a sash of that size will cost alone. I allowed ten per cent.
369 on these buildings for contractor's profit which is included in the total of the estimate.

I do not know how many feet of gas pipe there is in and about the building, nor the size of it. My estimate of $1,000.00 for gas and steam pipe about the buildings is an approximate estimate given in a general way.

I think the wholesale cost of the windows per sash is $3.50 or $400. The doors down there were mostly panel doors, although there are some batten doors. I didn't figure on the prices for windows and doors shown in the catalogue of the South Side Lumber Company or any scalper company. I figured on prices of legitimate companies and legitimate business, and on the regular price for doors, and took into consideration what the doors were when built and made a price on that basis. When I figured on the brick walls it included the openings in the walls, and I figured a batten door 2x7 feet at about $3.00, which includes hanging the door and hardware. The

lumber in the door would cost about $45.00 or $46.00 per thousand, or about $1.50, and all the way through I have used the present standard of prices that have been paid for this year. All of the windows where there was an opening that would take an 18x38 window, I figured the cost at about $2.25 or $2.50 a sash and all my computations are on that same scale and the prices I used are the market prices. As I remember the price for common dimension lumber 15 years ago was about $17.00 per thousand and the dimension lumber I figured in this estimate was at a price of $30.00 or $35.00 a thousand.

As I remember stone work 15 years ago, ranged around 15c. a foot. In some of these buildings Chicago brick was used; the
370 purifying building and barn are built, I think, of Chicago brick. I think that fifteen years ago the average price of laying brick was $8.00 or $9.00 per thousand, and the price has been changing during the last 7 or 8 years. I figured the concrete for the purifying room at 25c. per foot. In the past 8 years the price of iron has fluctuated very much and I have known it to be higher than it is now, and the price of iron now as I understand it, is about normal; about where it has been for the past five years and prior to then there was a short time that iron was down, but only for a year or two.

I have used my judgment in the matter of the present value of those buildings. As they stand most of them are in very good repair, and I would not depreciate the whole plant at 5 per cent., taking into consideration all that has been done in repairing the buildings. I think that that would be a fair valuation of the buildings. I think they have been kept up to a pretty fair valuation of their original condition by repairs, and that if they continue to repair them they will keep them about in their original condition, that is, in a general way.

I don't know that I am particularly friendly with the officers of plaintiff. I have just finished a building for the Cedar Rapids National bank of which Mr. Averill is president. Mr. Josslyn, the architect, handled it, and I didn't know that Mr. Averill had anything to do with it.

I said that 5 per cent. depreciation would be a fair depreciation on these buildings, that is, if you would depreciate my figures for new buildings 5 per cent. you would have the present value of these buildings. The annual depreciation of a brick building would be very slight if the building was kept in repair. That is, when
371 it needs a new roof it would be put on, or if it would be painted when it needed it, or any other repairs made that were needed. It wouldn't be my judgment that these buildings had been built on an average of twenty years. I would say from recollection that the barn had been built seven or eight years, but I can't say when the purifying room or boiler room were built. The buildings being down there in the smoky district you can't tell from appearance whether they have been built ten or twenty or only four years. I think that the retort house or a part of it, was built recently; this part as I recollect is on the south end of the building,

I didn't discover any evidence of breaking of the walls or jarring of the foundations or any injury in that way. The buildings in general, I think, were in good condition. I can't tell you about any defective place now.

In my estimate for the doors I assumed the doors in place, the door in the frame. I stated the depreciation of 5 per cent. on these buildings and this per cent. was to be applied on the total of my estimate and this refers to physical depreciation. My 5 per cent. was that the buildings by proper repairs would be kept up to their original value, but in these buildings there is something, possibly a roof that should have been put on or something to be taken care of of that kind; all those things would be physical decay.

George F. Kellogg.

The evidence of George F. Kellogg is here continued from page of the Abstract of Record.

372 In getting the amount of gas manufactured in 1905, I took the monthly manufacture and added them together and found it didn't agree with the total for the year 1905 as recorded in the record and I asked Mr. Averill about it and he said it was due to a fast meter and a correction had been made after they had made the test of the meter; they tested the meter and found it was 4½ per cent. fast and they made the correction on the total, and didn't make it on the monthly record and that made a difference between the yearly record and monthly record of 2¼ per cent. for the year 1905. The meter test was something Glenn Averill told me about. The gross amount stated on the record was 86,723,000 and the actual meter reading for the time was 88,634,210 feet. Between the actual meter readings as shown by their books and the amount they say was the correct meter readings, there is a discrepancy of over two million feet and I accepted the explanation of Mr. Glenn Averill and entered on Exhibit 25 the totals for the year as showed by the books. There was no word on the books such as "corrected" to show why the books had been changed, but this corrected reading appears on the books, but I have not made any mention of that in my report. I didn't think it was improper to use the corrected amount without making an explanation in my report. Where I found the figures 86,273,100 it was plain that other figures had been erased and in explanation of this erasure on the books they offered me the explanation I have just given. And of course this change would increase the amount of leakage, the difference between the amount shown in the monthly output and the total as carried in the books. I prepared the original report and also the certificate that appears attached. I prepared the pencil draft which was sent to be copied in the office at Chicago, but the report was made up by me and Mr. Neisley did not write any portion of it. The company put in the meter tester in August, 1907, and so they corrected record.

373 Assuming that they charged the cost of coal F. O. B. at $4.15 and find that they had a handling charge of 7c. per ton, making $4.22 a ton, then if in crediting it to the coal account and charging to the retort house it is charged at $4.25 it would be improper. I have not taken anything for shrinkage, just assuming the state of facts as I found them. I have just taken what I found on the books and put it on the balance sheet, and I did the same thing with reference to the oil account. There was no inventory of the oil. Both accounts are kept the same way. I presume they carry oil as an account in stock all the time, and if there was a stock on hand that credit would be more.

Q. You take the two items and put the two at $2817.00 on the balance sheet and by using that as you have it increases the cost of gas to the consumer.

A. It forms a part of the cost of making gas.

Q. In making your analysis of the cost of gas here it helps you to increase the cost of gas, does it?

A. It does the same as the cost of coal, but I do not think it would amount to 2c. per thousand. I have a credit balance here at the end of the year 1906.

On Exhibit "C" of Exhibit 25 there is an item of $5,590 which I got from J. R. Meader's account. I have not the details of the account here nor the analysis of the account. I never saw them but just took them as I saw them on the gas accounts. I did not undertake to analyze the figures. I do not know whether it is correct or not, only as it was taken from the gas account. I could not verify it at this time, it is unpaid gas bills of 1907. There was gas on hand and in the holder on the 1st of January, but I have not that item in my inventory. They do not keep anything to indicate ac-
374 counts receivable. Their accounts received is their gas sales account, unpaid accounts and gas bills due the 1st of January as metered out for December. I do not know whether it includes the gas on hand in the holder or not. After the first of January many of these accounts are dead and the parties removed.

Q. Is there any way of checking the consumers' ledger.

A. Not very well, the way they are kept.

The consumers' ledger shows the receipts for gas sold.

The way this account is kept everything that is unaccount- for in receipts between the Station meter and the Consumers' meter goes into leakage, and there is no way of checking it now, exactly. The difference between the manufactured gas and the metered gas goes into leakage.

Q. How can the gas company tell whether any of the employees are stealing from them, if they have no way of checking the consumers' ledger.

A. They check the consumers' ledger comparing the credits on the consumers' ledger with the receipts. They could detect stealing in that way. If there were consumers, whose accounts were not entered, not kept on the consumers, whose accounts were not entered, not kept on the consumers' ledgers, at all, using the gas, although it was metered, that would tend to increase the leakage

as shown here, if the meter readings were not entered on the meter book, and it would show the cost of gas in excess of what it actually was. The leakage amounting to 8,457,900 is small leakage,
375 a small per cent. I would think that the average percentage of leakage is 12 per cent. and 13 per cent. In the books that I have examined I have never found it as low as 5 per cent. and have never known it as low as 2 per cent.

My examination of Gas Company's book has always been at the instance of the Company. In going over the Company's books that I have examined I think that the average leakage was around 12 per cent. and 13 per cent.

In getting the amount of gas as shown in my report for 1906, I did not take into account the gas at Marion. I didn't have anything to do with the Marion plant. I took the amount of cost from Exhibit 26, and all that the books show is the gas used in Cedar Rapids and Marion gas is kept as a separate matter. I found it in the records of the Marion gas. I didn't take it into account in the statemen. I didn't include it. In Exhibit "E" I have the total of gas made in Cedar Rapids. Anything that is in the Cedar Rapids books, and if all the gas sent to Marion is manufactured here and is sent through one station meter then I have taken all of the cost, and if 1,472,200 c. f. of gas was sent to Marion and if included in the manufacture of gas would tend to increase the cost of gas at the burner. The books do not show any gas manufactured for Marion except as you notice on this report the number of feet sent to Marion and I included all the cost of manufacture found in the books and I understand that all of the gas consumed in Marion is manufactured at this plant in this city.

I put all the items in my report of the manufacturing and distribution of gas in Cedar Rapids. It was not suggested to me that all of the items here be apportioned here to the manufacture and distribution of gas in Cedar Rapids. If the cost of manufactur-
376 ing the Marion gas is included my report could not be taken as a correct basis for the manufacture and distribution of gas in Cedar Rapids.

Q. There are some other matters to which your attention has been called, for which this report would not be a correct basis would it?

A. Yes, I think you stated something about interest charged, which was not included in operating expenses. It is not included. I did not charge Mr. Averill with interest on the $1,910 shown on Exhibit "C" of Exhibit 25, but it may be included in the interest charges, but it would not be very apt to be on the balance sheet for 1907. I found interest charged to interest account on floating debts, and on the bonded indebtedness.

In making up the cost of producing gas and distributing it I charged interest on the bonded indebtedness, I found that on the books. I did not analyze the account of $1,910 with Mr. Averill or determine how long he had had it, and I di-n't charge him any interest on it. I didn't make any charges for any of this interest. The interest on bonds is not in the operating account at all, but it

should appear on this audit because it is part of the report of the Gas Company. It should appear on the sheet, but it is not a part of the cost of manufacturing or distributing gas and its purpose on this sheet is to get the net income.

Q. You say in your report. "The analysis of accounts would indicate that an insufficient amount had been expended upon repairs and renewals to keep the plant up to a proper working efficiency, if repairs and renewals were bought up to 4 per cent. of the physical property in our opinion etc." Where do you get that idea from?

377 A. That is from the average depreciation and that is estimated from experience, the experience of other companies. But I would not give the names of them. The item of $5,627.00 went into additions of gas works account; in their books is additions to the property. It was not placed by me in operating expense, I left it where I found it. By the books being mathematically correct I mean that I found them in balance, but that does not necessarily mean that there is no error in the principle on which the bookkeeping is done.

I added to my report a suggestion that before legislatures should assume to dictate a price for gas, they should allow 10 per cent. upon the actual existing capital upon proper approval.

Q. In getting this report and assembling it and making it up it was your object to show that the rate filed by the ordinance here was too low.

A. In my opinion it was too low, but the purpose of the report and making the suggestions was too render a statement as shown by the books. I assumed to suggest other things that should go toward the increasing of the cost and that the rate was too low. That was the thought.

Q. You assumed when you came to make this report it was to make a report to show that the ordinance rate was too low.

A. I understand that that was the test and in making this suggestion and writing the first part of the report as to depreciation and repairs it was to aid plaintiff company in showing the rate insufficient. I did not attempt to put everything in my report that would tend to show that 90c. rate was too low. I left out the item

378 of $5,627.00 from the repairs account. I understood it ought to have been charged to repairs and renewals and there was a memorandum on the books of that fact. That was for changing the old purifying apparatus and room and putting in new. I think that where you put in a new purifying apparatus apportion it should go to repairs and renewals, it is simply replacing old. The memorandum I mention was a lead pencil memorandum on page 123 of the trial balance book. I don't know when it was made but I took it to be a- instruction.

My statement on page 2 of my report (Ab. —) with reference to 10 per cent., has reference to ten per cent. on the actual existing capital which would mean the price value less the bond issue. Exhibit F and G are simply a proof of the cash books to prove the cash transactions. The items on Ex. G., Marion account $1.300, Decem-

ber $300 receipts are taken from the cash book, I don't know what they are for, and I did not try to analyze them. It was cash paid in on the Marion account and I didn't try to find out what they were for as I was not analyzing the Marion account. I don't think it was for gas sold.

I do not think those items were for gas sold because they didn't come from customers' account and there is nothing to indicate that they came from that account.

Q. There is both a debit and a credit Marion account what is the credit account?

A. In April $6,402.10 and there are others that run through the year, the total being $28,366.23. There is a credit on that $1,786.88, and I assume these items were for material and things of that kind, due to the Marion construction. I found no account of the
379 consumers of gas in Marion. I notice on the cash book that there is an item "Marion Pay Roll" for October I have $2,289.45 which I got off of the cash book. You will notice on the cash book that each fiscal month is closed on the 20th instead of the 30th and instead of a calendar month it is a physical month, and I took my receipts and disbursements off in the same manner for the sake of expediting the work. My purpose in showing the Marion account in Ex. G was to show all cash transactions and to verify my cash account, outside of verifying the cash account it cuts no figure.

Q. Under Exhibit H, I notice pipes and supplies for mains and services, did you analyze these figures?

A. Yes sir. I got the figures out of one of the books. I was not assisted by anyone in making the analysis. I got the showing from the cash books, the bills and checks and I identified the items by the nature of the materials. For instance a check to McDonald indicated that it was for meters and I assumed it was for meters. Some of the checks showed for what they were paid and some did not, when they didn't I used the names of the persons. I was pretty careful to sift out the repairs as I wanted to distribute them where they belonged. The brick and cement work items I got from the bills, I have an item on Ex. "I" constructing new purifying room $9,427.02 that was taken from the new purifying room account.

Q. Has it any connection with that $5,627 item?

A. I think it may enter into that. I left it stand in gas works account—additions to property; it is included in Exhibit I, for the year 1906, and entered into the total of $30,866.53; the
380 $6,000 was not new purchase, but old materials thrown away. I left it in there and took no part out, it is not a separate item but it is in there. The item of $9,427.02 and $8,000 on gas machinery contract, the $5,627.00 is the old part that was thrown away when this was put in. I didn't find any record of any thing thrown away.

In making up the report I had books submitted to me by the company consisting of general ledger, general cash book, journal, record of meters, metered gas, meter books and consumers' ledger. I didn't see any pay rolls, and I saw no contract with J. R. Meader

or any stove company, and I got the items that go to make up these exhibits from the books that I have mentioned.

The average price of gas sold in 1905 and 1906 is the result of the sales divided by the gas metered. The cause of the difference (between the two years) was on account of gratuitous gas. That occurred to some extent in 1905. I don't recollect what the price was in 1904.

I was appointed assistant manager of the audit company about one year ago. Mr. Forcythe of our company is an accountant. We employ from 10 to 15 men.

By standard classification of gas accounts, I mean that adopted by a great many companies. The repairs and renewals, and depreciation for this company in 1905 amounted to 15.5c. per M c. f. in 1905 and 21c. in 1906. I didn't consider the depreciation with repairs and renewals. They do not go together. There is no connection between them. Repairs and renewals are actual repairs and renewals while depreciation is on property not repaired or renewed.

381 If there is considerable money expended for repairs and renewals it reduces the depreciation somewhat, but you would still have to figure off your depreciation on the whole value of the plant. There is depreciation on the mains, services and connections, and I would think it would amount to 4 per cent. easily enough. I think the depreciation should be 4 per cent. on the value of the property under ground and above—on all the property. This is the first case where I have taken an audit of the books of a company where the question involved was the fixing of rates.

Redirect examination:

The changes made on the Book Exhibit*ed* 26 in the total "send-out" what is called the yearly record for 1904, 1905 and 1906 are perfectly plain, and it shows perfectly plain what has been the alternation in the figures, and in examining the book I noticed that. I called Mr. Averill's attention to it and asked him why it was done and he told me about the meter being fast and that on testing they found it to be 4½ per cent the proper way to arrive at the actual amount of gas would have been to divide the total by 104½ and multiply by 100.

So far as the books were concerned the only effect of reducing the send out by this correction would be to dim*m*ish the apparent leakage and would not affect my report in Exhibit 25 as to the cost of manufacturing and distributing gas, because it would simply be taken out of the metered gas at works and put into the leakage. I used as a division in arriving at the cents per M. c. f. of manufactured gas the metered sales of gas. The only correction that was made was made in the yearly totals. If one desired to find the actual amount

382 of gas manufactured each month for those years in which the meter was too fast it would be necessary to take 4½ per cent out of the manufactured gas.

I ascertained that the gas that was used at the works and at the office was metered through a meter and I had a record of those meters, and in making my statement of the cost of gas I added the

amount that this gas came to at $1.00 per M. c. f. and put on the other side of the account gas sales of the same amount and in doing this I credited the company with gas used by itself and charged the company with gas used by itself at $1.00 per M. c. f., and it would not affect the result perceptibly.

I believe that the charging to the company of gas used by itself is a proper one, because the lights are a part of the expenses of the works, and if they do not pay the cost themselves they would have to buy electric lights—they have to have light and the gas used at the office is figured on the same principle.

From my experience, I know that it is customary for companies to test the station meter as well as customers' meters.

The proper way to make up the account with regard to discorded machinery is ordinarily to make an estimate of the abandoned pieces of machinery allowing depreciation for use, and arriving at a fair estimate of it, that should be charged to renewals and repairs account and the balance is charged up to new property account. In most cases larger machinery is put in, in place of the one taken out. When a new piece of apparatus replaces an old piece, the old one is charged to repairs and renewals. In my experience in the examination of gas accounts the renewals and repairs are usually
383 charged off for the year in which they are made, if there is anything beyond that it usually goes to additions to property—if any thing above replacement value.

Q. What did you mean by apportioning certain charges over a series of years.

A. The cost of new business, of advertising it may be in one form or another. Very frequently it is distributed over two or three years, but it is generally confined to the year in which it is made.

I did not make up this report and statement or any part of it with an idea of magnifying or increasing the cost of gas in this city. I took the books as I found them and made my report from them, let it show what it would.

In making up my report on the cost of gas I ignored everything pertaining to Marion with the exception of cash receipts and disbursements, in the balance sheet which I could not ignore and prove my cash transactions, and this did not affect the cost of gas as I figured it.

I found about $28,000 on the cash book charged up against Marion plant and found credits back and bills payable to the gas company exceeded this amount by a few thousand dollars.

The interest accounts referred to in my report have no bearing on the operating expenses whatever, but only on the net income of the company.

With reference to the coal account, the fact that the books showed and I made use of the credit balance had nothing to do with increasing the cost of gas, so far as my statement is concerned, only in so far as it was part of the consumption of coal. The
384 credit balance to the coal yard represents an amount that the retort house owed to coal-shed, and this could arise by the consumption of coal being more than the purchase. And if there

was a considerable amount of coal at the end of the year bought and put in the shed and not paid for, it would not show in the account—the amount purchased and not paid for wouldn't show in the account and the amount of coal on hand would not cut any figure with that credit balance. I found nothing in the books to indicate that the coal taken from the shed was charged to the retort at a price in excess of what was paid for coal. The company does not keep accounts with the different coal companies, but pay the bills and charge it to "gas account."

In computing for the purpose of my schedules of the cost of gas for the years I arrived at the quantity of coal by taking the amount charged to the retort house and credited the gas coal account. The $1,910.00 which Mr. Averill owed the gas company was owed by him for about a month. I also found that on the 24th of November, the company owed him $5,100.00 and there was a debit of $3,022.00 so that he had a credit of $1,600.00. The company was indebted to him in Dec. 1905, over $9,000.00 and I was not able to find where the company paid any interest on that to Mr. Averill.

EDWARD G. PLATT, recalled.

This evidence follows that of the same witness on page 96 of this Abstract of Record.

Direct examination:

I have prepared a statement of the present cost of the manu-
385 facture and distribution of gas based upon the auditor's re-
port of the business of the plaintiff for the year- 1905 and
1906. The audit shows the exact condition of affairs.

The total gas manufactured during the years 1905 was 867,723,-100 cubic feet, the gas sold and used by meter was 77,783,300 cubic feet leaving unaccounted for gas 8,940,840 cubic feet or 11.49 per cent. The total receipts from the sale of gas was $87,850.68.

The statement I have prepared shows what I believe to be the cost of gas in Cedar Rapids for 1905 and 1906. I have worked with Mr. Kellogg for several hours in making up this account. I didn't go over every book or work on it every day and the basis of my calculation is taken from the advance sheets made by the auditor and my statement is made from those figures.

The figures I have given as to the amount of gas sold and receipts from same would represent to the company a price of $11.29c. per M c. f. of gas sold. This statement of the cost of gas for the year 1905 is marked Exhibit 14 and is as follows.

EXHIBIT 14.—1905.

Gas manufactured			86,723,100 c. f.	
Gas sold and used by meter			77,782,300 c. f.	
Gas unaccounted for			8,940,800 c. f.	11.49%
Total receipts for sale of gas	77,782,300 c. f.	$87,850.68	1.129 per M	

	Manufacturing.		Cost Per M. mfgd.	
Expense:				
Superintendence	$1,485.00		.0171	
Gas used at works	1,088.00		.0125	
		$2,573.00		.0296
386				
Water Gas:				
Oil	1,105.00		.0127	
Coke	525.00		.0060	
Labor	197.58		.0022	
Supplies	1.35		.00001	
		1,828.93		.0210
Coal Gas:				
Coal	35,497.00		.4093	
Labor	7,119.27		.0823	
Supplies and Miscl. Ex.	56.40		.0006	
Purf. Labor	869.55		.0100	
Purf. Supplies	585.12		.0066	
		44,127.34		.5088
		48,529.27		.5594
Total cost Inc. Residuals Less Residuals:				
Coke	16,577.93		.1911	
Tar	1,285.57		.0148	
		17,863.50		.2059
Total cost mfg. less Residuals		30,665.77		.3536

	Distribution.		Cost per M. sold.	
Dist. Labor—Meter Readings, Sets and Removes, Arc Lmp. Mtnce. and Grat. Wrk.	3,759.63		.0483	
Dist. Supplies	530.90		.0068	
Grat. Labor and Material on New Business.	2,487.25		.0319	
		6,777.78		.0870
Repairs and Renewals:				
Reps. and Renewals to Mains, Ser. and Meters	1,496.08		.0192	
Reps. to bldgs. and Mach.	724.72		.0093	
		2,220.80		.0290
General Expense:				
Salaries of Officers	2,375.00		.0305	
Salaries of Accounting Department	2,800.21		.0358	
Genl. Office Sundries, miscl. Ex.	612.83		.0078	
Office Rent and Lights	841.64		.0108	
Stat. Ptg. and Postage	168.53		.0021	
Insurance	30.50		.0003	
Taxes	2,202.80		.0280	
Legal Expense	30.00		.0010	
		9,110.71		.1170
Total Cost of Distribution		18,109.29		.2330
387 Cost of Leakage		3,165.83		.0407
Total cost of Distribution including leakage		21,612.91		.2737
Total receipts from sale of gas (77,782,300 c. f.)				$87,850.68

			Cost Per M. mf'd.	
Total cost of manufacture	$48,529.27		.6595	
Less residuals	17,863.50		.2059	
		30,665.77		.3536
			Cost per M. sold.	
Total cost of distribution	18,109.29		.2330	
Plus leakage	3,165.83		.0407	
		21,275.12		.2737
		51,940.89		.6273
Receipts from gas sold (as above)			87,850.68	
Total cost mfg. and dist. (as above)		51,940.89		.6273
Depreciation charged off		10,000.00		.1285
			61,940.89	
Gross income—less depreciation			25,909.79	.7558
Gross income less depreciation (as above)			25,909.79	.7558
Additions to income—rents from real estate			292.91	
			26,202.70	
Deduction from Income—				
Interest on floating debt		142.29		
Interest on bonds		3,788.75		.0505
			3,931.04	
			22,271.66	
Dividends			12,000.00	
Surplus			10,271.66	
Surplus (as above)			10,271.66	
NOTE:—Less repairs (new purifying apparatus not complete in 1905)			5,627.00	
			4,644.66	
Cost of gas in holder			.3536	
Cost of distribution			.2737	
Cost at burner			.6273	
Depreciation charged off		.1285		
Interest on bonds		.0505		
Special repairs to purifiers		.0724		
			.2514	
			.8787	
Add for profit 7 per cent on $5.00 per 1000 cu. ft. gas sold			.35	
Price which company would have been justified in charging			$1.2287	

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Receipts from gas sold (as above)			87,850.68	
Total cost mfg. and dist. (as above)		51,940.89		.6273
Depreciation charged off		10,000.00		.1285
			61,940.89	
Gross income less depreciation			25,909.79	.7558
Gross Income—Less Depreciation (as above)			25,909.79	.7558
Additions to Income—Rents from Real Estate			292.91	
			26,202.72	

Deductions from Income:—			
Interest on Floating Debt	142.29		
Interest on Bonds	3,788.75		
		3,931.04	.0505
		22,271.66	
Dividends		12,000.00	
Surplus		10,271.66	
Surplus (as above)		10,271.66	
NOTE: Less Repairs (New Purifying apparatus not complete in 1905)		5,627.00	
		4,644.66	
Cost of Gas in Holder			.3536
Distribution			.2737
At Burner			.6273
Depreciation Charged off		.1285	
Interest on Bonds		.0505	
389			
Special Repairs to Purifiers		.0724	
			.2514
			.8787
Add for Profit 7 per cent on $5.00 per 1000 cu. ft. Gas Sold			.35
Price which company would have been justified in charging			$1.2287

The figures for the manufacture of gas are taken from the audit of the books and represent the actual cash of the manufacturing of gas in Cedar Rapids, that is putting the gas into the holder for the year 1905. This total represents everything except one special repair (the item of $5,627.00) being the new purification apparatus which was not built until the end of 1905, but was a proper charge against manufacturing for 1905.

The figures I have given in the statement for distribution for 1905 were taken from the various memoranda that was taken from the books of the company as furnished me by the auditor and represents the amount expended in these items by the company during the year 1905.

The total cost of distribution including leakage is $21,275.12 or 27.37c. The item of leakage is the difference between the gas made as registered by the station meter at the works and the total quantity of gas consumed as represented by the total of the consumers' meters. That leakage is a little excessive.

The total cost of gas at the consumer's burner is $51,940.89 or 62.73c. In addition to that 62.73c. I have added the amount charged off for depreciation of $10,000 during the year 1905 or 12.85c.
390 and added it to 62.73c. which makes 75.58c. I added to income rent $292.91 and have deducted interest on the floating debt of $142.29, interest on bonds $3,788.75 making 5.05c. Therefore the total cost of gas at the burner including depreciation charged off, and interest on bonds and special charge for repairs

of purifiers of $5,627.00 which is 7.24c. is 87.87. Added to this as profit on investment 35c., which is 7 per cent of $5.00 per M c. f. of gas sold brings what I think is a price that the company would be justified in charging of $1.2287.

The reason why I have added to this cost of gas for 1905 the expense of the new purifiers is because it was open account on the books of the company. I ascertained that this restoring of the purifiers had been carried during the year, but was not completed until the end of the year and these items were carried and no account made of that work until the end of the year. It is my opinion that it was a proper charge to the year 1905. The complaint that I would make is that is wasn't charged along through the year as the work was being done.

I arrived at the figure of 7 per cent. on $5.00 per M c. f. of gas sold as being my judgment of what is a fair valuation of the property of the plaintiff; it would represent a fair valuation of the property in the year 1905. The $5.00 per M c. f. of gas sold would represent a valuation of $388,910.00, and 7 per cent. on that amount would represent an income of $26,250.00.

I prepared a statement of the business of the plaintiff for the year 1906, which is based upon the same source of information as that used in the statement for 1905. This statement of the cost of manufacturing gas for 1906 is upon the basis that in 1906 100,764,-
391 000 cubic feet were manufactured of which 92,306,100 cubic feet *was* metered and the unaccounted for gas amounted to 8,457,900 cubic feet or 9.16 per cent. of gas manufactured. The receipts from sale of gas for year 1906 amounted to $96,593.78, being $1.046 per M c. f. of gas sold.

I have examined the methods and ways in which the plant of plaintiff has been operated. My judgment is that the property is being managed with extreme economy; I mean by that economy such as no management would think of continuing for a series of years. In my judgment the degree of economy practiced by plaintiff cannot continue through a series of years. All of the works and management would be perfectly proper in a small town, not growing, but Cedar Rapids is a city and judging from appearances it is growing rapidly and in the operation and management of gas works as in other business of public importance, the future in the same has got to be studied and considered very carefully. I would not undertake to say that it had not been studied, but, from my experience, if I were operating this property I would feel that these things, which went in to make up the works should be of a more substantial character than exists at the present time in their works. The present management has evidently kept the property up to an efficient condition but not with such regard to the future as I would consider ought to be done. For instance, I would feel that they were cramped for space in the retort house and have not sufficient room to operate the benches properly, and more especially the basement where the firing is done. I would have put in the kind of benches they have now but paid more attention to the condition of the space underneath the fire where much of the work is done.

The water gas apparatus is cramped into a very small
392 space. The space occupied by the engines and blowers is so small that in my judgment there is liability there from fire. There is not sufficient space about that machinery for the men to go about to give it proper attention. The purifying boxes are but 3 feet deep, while the modern purifying box is five feet deep and would naturally double the purifying efficiency. I think more space should have been provided in the engine and exhauster room; there is too much machinery for the space; the machinery could have been spread out with better results with more room. All these things I have mentioned have been the result of practicing economy and they will have to reckon with it in the future in my judgment, and it will have to be provided for by additional expense.

I have prepared a statement of what I believe would be the proper charge for manufacturing and distributing gas in Cedar Rapids, taking as the basis of my calculation such a works as I would consider proper for Cedar Rapids and based upon the operation of such a works, taking the future into consideration. The statement is based upon annual sales of 150,000,000 cubic feet, and is for mixed gas and is marked Exhibit No. 18.

EXHIBIT No. 18.

Annual Sales:—150,000,000 c. f. Mixed Gas.

Manufacturing:				
7,810 tons gas coal at $4.50	$35,145.00		.2345	
1,522 tons F. coke at $4.50	6,849.00		.0457	
2,250 tons B. coal, at $3.50	7,875.00		.0525	
318,750 gal. oil, at 4c	12,750.00		.0850	
1,500 tons gan. coke, at $4.50	6,750.00		.0450	
		69,369.00		.4627
Labor:				
6 Stokers, at $2.25	4,860.00		.....	
1 Yard Man, at $2.00	720.00		.....	
1 Purif. Man, at $2.25	810.00		.....	
1 Gas Maker, at $2.75	990.00		.....	
2 Firemen, at $2.50	1,800.00		....	
1 Mechanic, at $3.00	1,080.00		.....	
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1 Genl. Form'n, at $3.33	1,200.00		.....	
Extra Labor	1,000.00		.....	
		12,460.00		.0831
Repairs to Works	3,500.00		.0233	
Purification Supplies	375.00		.0025	
Expense Works	2,000.00		.0133	
Tools, Etc.	350.00		.0023	
½ Manager's Salary	1,800.00		.0120	
		8,025.00		.0534
		$89,854.00		.5992

Less Residuals:			
3,544 Tons Coke, at $4.50	15,993.00	.....	
93,720 Gals. Tar, at .02	1,874.40	.....	
39,050 lbs. Ammonia, at .05	1,952.50	.....	
	19,819.90		.1324
Total cost in Holder	$70,034.10	.....	.4668
Total cost of Distribution	37,920.00	.....	.2699
Cost at Burner	107,954.10	.....	.7367
Depreciation and Final Reserve		.15	
Contingencies		.05	
			.20
			.9367

The figures in Exhibit 18 are based upon my judgment and experience as to what is a proper cost of gas for a plant of the character I have mentioned (an ideal plant), operated in Cedar Rapids. If I were to come here and make figures upon the cost of a plant for Cedar Rapids and accompany it with an estimate of the cost, those are the figures that would be made.

I have prepared a schedule with reference to depreciation which I have had marked Exhibit 19, in which I have used the values of the buildings, apparatus and mains as shown in my valuation of the company's property. That is, I have assumed that same valuation that I gave in my testimony in the opening of the case.

I arrived at the depreciation by studying the conditions and inspecting the buildings, machinery, apparatus, mains, services
394 and meters and formulating in my own mind, after taking up each of these items, a safe estimate of the life of these respective parts of the plant. The elements that enter into the question of depreciation are obsolescence, inadequacy and physical decay, and in making up these figures I have had these ideas before me.

Exhibit No. 19.

Depreciation.

	Per cent.		
Brick buildings and walls	2½	$39,515.00	$987.87
Wooden buildings	5	4,111.00	205.55
Holders, tanks and wells	3	60,085.00	1,802.55
Yard connections	4	1,476.00	59.04
Coal gas benches	10	16,550.00	1,655.00
Water gas apparatus	10	4,500.00	450.00
Water gas apparatus (new)	10	14,000.00	1,400.00
Boilers and stack	8	2,350.00	188.00
Scrubbers, condensers, concentrators, etc	5	9,870.00	493.50
Engines, exhausters and compressors	6	2,252.00	151.50
Purifiers	6	5,000.00	300.00

	Pumps, etc	10	230.00	23.00
	Governor, etc	6	625.00	37.50
	Other machinery and tools	10	697.00	69.70
	Other machinery and tools (shop)	10	582.50	58.25
	Tools in coal shed	20	150.00	30.00
	Injectors and tools (boiler room)	20	120.00	24.00
	Station meters, guages and photometer	6	2,802.00	168.12
	Scales	10	200.00	20.00
395	Horses and wagons	13	1,185.00	154.05
	Miscellaneous small piping	10	504.00	50.40
	Sundry C. I. pipe & specials	3	641.00	19.23
	W. I. street mains (152,825 feet)	6	33,642.00	2,018.52
	W. I. street mains (H. P.) (23,700 feet)	6	5,483.00	328.98
	C. I. street mains (60,000 ft.)	2	39,570.00	791.40
	Paving	2	36,291.00	725.82
	Valves and specials	2	881.41	17.62
	Service connections	6	8,000.00	480.00
	Paving	6	7,289.00	437.34
	Meters in stock and in use	6	30,090.00	1,805.76
	Arc lamps	10	3,575.00	357.50
	Contents of office	10	1,866.00	186.60
	Contents of shop	10	1,058.00	105.80
			$335,469.91	$15,602.60

Average per cent. 4.65.
Per M 16.95c.

Injuries and damages	.01	$920.00
Legal expense	.01	920.00
Bad debts	.0025	230.00
Promoting new business	.03	2,760.00
Taxes (above actual)	.005	460.00

The depreciation on the coal gas benches does not contemplate a restoration of the retorts for those are to be taken care of by the annual repair work, but when it comes to removing the arches and furnaces, that is to be taken care of by this item of depreciation. I figured that in ten years the arches will have become cracked and unfit for use or they will have become too small for the progress the plant will have made and the entire set will have to be
396 removed and renewed. The retort itself has a life of about 18 or 28 months depending on the care given the bench, and the frequency of letting down the fires. I would like to say with reference to the repair of benches, that we are now about at a point of deciding whether to continue the horizontal retorts like these, or of using the inclined, as in Germany and many places in England, and it is only a question of the size of the works and the ability to handle coal by machinery, to bring about this condition of things. The class of benches used here may therefore be obsolete in the near

future. It will be up to the plaintiff by the time these arches have to be restored to say whether it will use the present kind or the inclined retort.

I applied depreciation on the water gas apparatus at 10 per cent. per annum of the valuation, and is based on what I consider a fair efficiency for the present water gas apparatus and the same applies to coal gas. I also considered the factor of inadequacy, which I believe is a proper thing to take into consideration. It is not altogether a question of the physical life, it is also a question of efficiency and capacity.

I assume that at the end of ten years there won't be anything left of the water gas apparatus outside of the bear shell.

In figuring a depreciation of 8 per cent. per annum on boilers and stocks I took into consideration the present condition of the boilers and the ordinary efficient life of a steam boiler and the accessories that go with it. The life of a boiler depends upon the kind of use, but I have assumed that these boilers would have ordinary usage.

I figured a depreciation of 5 per cent. upon the scrubbers,
397 condensers and concentrator, which is based upon the apparatus becoming inadequate and obsolete, though there is a very little physical decay on the engines, exhausters and compressors. I figured 6 per cent. mostly for inadequacy and physical decay, because they have working parts that are used continuously and wear out ultimately. On the purifiers I allowed 6 per cent,. which is based on my experience and knowledge of the life of such machinery and would be on account of inadequacy and physical decay. The company will have to have larger capacity and the attack upon the purifying boxes by reason of the material that is used for purifying gas is very severe. I have had to take out purifiers at two works because of inadequacy and also because of decay. The depreciation which I figured on tools is based on their wearing out by reason of their constant use.

On station meters, gauges and photometers, I figured a depreciation of 6 per cent., and is based so far as the meter is concerned on inadequacy and to some extent on wearing out.

I have figured 6 per cent. depreciation on the iron mains and the factors which I took into consideration were: First, inadequacy; second, decay; third, obsolescence. My estimate is based upon the average length of time that I have indicated in which wrought iron mains would become too small and on account of the decay that would have taken place. That particular kind of pipe would not pay to take up and remove and would be abandoned. I have estimated that all wrought iron pipe would become too small or be worn out in sixteen years. It would be proper to say that 1-16 of it would have to be abandoned yearly, but I have not considered it in
that way. I looked upon it as a whole. My judgment is that
398 steel gas pipe will decay quicker than wrought iron. We are able to buy very little wrought iron pipe now. Most pipe you buy for the size of the high pressure is steel pipe, and if the high pressure pipe of plaintiff is steel pipe then in my judgment the depreciation would be greater than on wrought iron pipe. There

are one or two firms from which wrought iron pipe can be purchased, but they usually send you steel for wrought iron.

On cast iron pipe I figured a depreciation of 2 per cent., based principally upon inadequacy and this is arrived at from my experience and study of that kind of pipe. I placed the depreciation on paving in the same class as cast iron pipe, because in the future relaying of the mains in this city, the relaying of the paving will have to be taken into consideration also. I figure on the cost of relaying the paving, not the cost of the paving itself.

The principal factor in the depreciation of service pipes and service connections and meters is physical decay, and my estimate is based upon my experience in that respect. The depreciation on arc lamps is due mainly to obsolescence and physical decay, because of the fact that the styles of lamps are continually changing and before the end of the period here 10 years the present style of lamp will probably find its way to the company's store room and a new lamp be substituted. If the consumer had the investment in the lamp, I presume they would manage to use them longer than ten years, but where the company has the investment the consumer wants the latest style.

With reference to rebuilding of plants, I have only been connected with one plant long enough to observe personally where one works has been entirely abandoned and another substituted. Of course I have been connected and am now with works the life
399 of which I am familiar with, and also familiar with old works that have been supplanted.

I went to Des Moines in 1887 as manager and there saw one building after another abandoned and a new one substituted, and one piece of machinery after another replaced. As I remember there is but one building, and one holder, and one of the yard connections of the old works, and not a single piece of apparatus except one water gas machine in existence there now that was there when I went there in 1887, and that water set is not in use, and the only building left is the building occupied at the works for office. Everything else had been entirely and completely changed between 1887 and 1903 when I left, and a great many changes have been made in the distributive system. There was a great deal of three-inch pipe laid and that has been abandoned and new pipe laid in its place. In 1895 the Des Moines Gas Company wasn't selling to exceed half as much gas as is being sold here at this time.

The Milwaukee works have been entirely rebuilt since 1902. The old works have been practically abandoned and a new cite selected and a complete new works built, and the same thing is true of Detroit, though not to the same extent. At Spokane, where I am interested, the old works are being abandoned on account of inadequacy, as soon as the new works can be completed, including the building and everything.

In Exhibit 19 I have an item of injuries and damages 1 per cent., which represents a fund which I would consider it advisable to set aside to cover injuries and damages to employés. One per cent. amounts to $920.00, which would cover accidents at the works, on the streets driving teams.

400 The legal expense I also figure 1 per cent., which is based on my experience, and is to anticipate any legal expenses in connection with the operation of the company.

The item of bad debts represent bad debts for gas and merchandise that the company is unable to collect, and this I figured at .0025c. per M. c. f. The total sales of the company, which figures I obtained from its books, for the last ten years, was 493,849,000, which would be an average per year of 493,840,000 cubic feet. During that time the company charged off for depreciation $73,000.00, which would be 14.78c. per M. c. f. of gas sold. My average estimate for depreciation is 16.95c. as against that actually existing.

I have prepared two schedules of comparisons of the gas business in Cedar Rapids with other cities similarly situated; one is based on the population of cities ranging between 30,000 and 40,000 people, the other is based upon the gas sold, the cities averaging about the same sales as Cedar Rapids. The information has been taken from Brown's Directory. Brown's Directory is compiled by the "Progressive Age," a magazine published in New York and contains the most reliable information we have concerning affairs of gas companies and is looked upon by gas men as being a guide, and is accepted generally as being correct information in regard to the matters I have set out in my schedule. These two schedules are marked Exhibits 20 and 21.

Exhibit No. 20.

Comparison by Population.

From 30,000 to 40,000 Population.

City.	Send out c. f.	Price per M.	
Pueblo, Colo.	100,000,000	1.50	1.00
401 Montgomery, Ala.	60,000,000	1.62	1.08
Sacramento, Calif.	173,690,520	1.00	1.00
San Diego, Calif.	100,000,000	1.10	1.10
San Jose, Calif.	127,216,000	1.25	1.25
Meriden, Conn.	112,000,000	1.15	1.15
Jacksonville, Fla.	59,000,000	1.50	1.50
Bloomington, Ill.	110,000,000	1.00	1.00
Moline, Ill.	105,000,000	1.125	1.125
Quincy, Ill.	90,000,000	1.00	1.00
Rockford, Ill.	141,000,000	1.05	1.05
Waukegan, Ill.	140,000,000	1.00	1.00
New Albany, Ind.	68,000,000	1.00	1.00
Burlington, Iowa	82,405,000	1.50	1.00
Cedar Rapids, Iowa	110,000,000	1.15	to 1.00
Clinton, Iowa	75,000,000	1.00	1.00
Council Bluffs, Iowa	71,000,000	1.25	1.25
Dubuque, Iowa	123,000,000	1.00	1.00
Sioux City, Iowa	216,662,000	1.00	1.00

Waterloo, Iowa	65,000,000	1.20	1.20
Topeka, Kansas	66,000,000	1.25	1.25
Wichita, Kansas	40,000,000	1.35	1.35
Bangor, Maine	51,381,500	1.15	1.15
Lewiston, Maine	49,000,000	1.40	1.40
Fitchburg, Mass	42,000,000	1.45	1.45
Gloucester, Mass	55,000,000	1.10	1.10
Haverhill, Mass	170,000,000	1.00	1.10
Newton, Mass	190,000,000	1.00	1.10
Quincy, Mass	20,000,000	1.50	1.50
Taunton, Mass	78,538,000	1.10	1.10
Bay City, Mich	70,000,000	1.00	1.00
Kalamazoo, Mich	150,000,000	1.00	1.00
Springfield, Missouri	75,000,000	1.00	1.00
Atlantic City, N. J	255,000,000	.90	.90
Plainfield, N. J	100,000,000	1.15	1.15
402 Auburn, N. Y	90,000,000	1.13	1.13
Elmira, N. Y	35,000,000	1.50	1.10
Freeport, N. Y	72,000,000	1.50	1.50
Gloverville, N. Y	85,500,000	1.30	1.30
Newburgh, N. Y	75,000,000	1.20	1.20
Watertown, N. Y	74,000,000	1.50	1.50
Charlotte, N. C	43,000,000	1.50	1.25
Wilmington, N. C	33,000,000	1.65	1.25
Canton, Ohio	18,000,000	1.00	1.00
Springfield, Ohio	100,000,000	1.00	1.00
Oklahoma, Okla	40,000,000	1.35	1.00
Bethlehem, Penn	45,000,000	1.40	to 1.15
Norristown, Penn	72,000,000	1.20	1.20
Williamsport, Penn	80,000,000	1.50	1.00
Woonsocket, R. I	50,000,000	1.25	1.25
Columbia, S. C	26,000,000	1.60	to 1.25
Austin, Texas	35,000,000	1.60	1.40
El Paso, Texas	65,000,000	1.60	1.50
Salt Lake City, Utah	37,964,000	1.70	1.25
Bellingham, Wash	28,000,000	1.80	1.60
Wheeling, W. Va	116,000,000	.75	.75
Appleton, Wis	53,000,000	1.10	1.10
La Crosse, Wis	67,000,000	1.00	1.00
Marinette, Wis		1.42	1.00
Oshkosh, Wis	62,000,000	1.50	1.00
Oshkosh, Wis	62,000,000	1.50	1.00
Racine, Wis	145,000,000	1.20	1.00
Average	5,088,357,020	1.24	1.15

Average, send out per capita ..... 2,566 c. f.
Cedar Rapids, send out per capita ..... 3,142 c. f.

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EXHIBIT No. 21.

Comparison by Send-Out.

From 75,000,000 c. f. to 125,000,000.

Little Rock, Arkansas	60,000	1.25	1.25
San Diego, California	35,000	1.10	1.10
San Jose, California	35,000	1.25	1.25
Pueblo, Colo.	40,000	1.50	1.00
Derby, Connecticut	28,000	1.10	1.10
Meriden, Connecticut	30,000	1.15	1.15
New Britain, Connecticut	28,000	1.15	1.15
Stamford, Connecticut	20,000	1.25	1.25
Augusta, Georgia	50,000	1.50	1.00
Bloomington, Illinois	40,000	1.00	1.00
East St. Louis, Illinois	50,000	1.10	1.10
Galesburg, Illinois	22,000	1.15	1.00
Moline, Illinois	40,000	1.125	1.125
Quincy, Illinois	40,000	1.00	1.00
Rockford, Illinois	38,000	1.05	1.05
Streator, Illinois	19,000	1.25	1.25
Waukegan, Illinois	24,000	1.00	1.00
Hammond, Indiana	50,000	1.00	1.00
Burlington, Iowa	26,500	1 50	1.50
Cedar Rapids, Iowa	35,000	1.15	to 1.00
Clinton, Iowa	25,000	1.60	1.00
Davenport, Iowa	45,000	1.25	1.25
Dubuque, Iowa	40,000	1.00	1.00
Brocktown, Massachusetts	47,794	1.25	1.25
North Adams, Massachusetts	22,000	1.35	1.08
Pittsfield, Massachusetts	25,000	1.25	1.25
Salem, Massachusetts	50,000	1.20	1.20
Taunton, Massachusetts	32,000	1.10	1.10
Ann Arbor, Michigan	18,000	1.00	to .60
404 Battle Creek, Michigan	25,000	1.00	1.00
Lansing, Michigan	25,000	1.17	.945
Port Huron, Michigan	22,000	1.20	.80
Springfield, Missouri	35,000	1.00	1.00
Plainfield, New Jersey	39,000	1.15	1.15
Auburn, New York	35,000	1.13	1.13
Flushing, New York	21,000	1.20	1.20
Gloversville, New York	30,000	1.30	1.30
Newburgh, New York	27,000	1.20	1.20
Poughkeepsie, New York	24,000	1.20	to 1.00
Watertown, New York	28,000	1.50	1.50
Springfield, Ohio	40,000	1.00	1.00
Allentown, Pennsylvania	45,000	1.10	1.10
Easton, Pennsylvania	50,000	1.25	1.25
Johnstown, Pennsylvania	45,000	1.20	1.00

Williamsport, Pennsylvania	45,000	1.50	1.00
York, Pennsylvania	50,000	1.10	1.10
Newport, Rhode Island	25,000	1.30	1.30
Charleston, *North* Carolina	60,000	1.60	1.20
Chattanooga, Tennessee	50,000	1.00	1.00
Knoxville, Tennessee	55,000	1.00	1.00
Fort Worth, Texas	45,000	1.80	1.33
Spokane, Washington	76,000	1.50	1.50
Tacoma, Washington	75,000	1.25	1.25
Wheeling, West Virginia	40,000	.75	.75
Madison, Wisconsin	24,000	1.25	1.25
Average	2,051,294	1.19	1.12

Average, 2,150 c. f. per capita.
Cedar Rapids, 3,142 c. f. per capita.

Some of these cities sell gas cheaper than it is sold in Cedar Rapids. Pasadena has very cheap gas, but you notice the
405 population is only 25,000, while the sales more than double the amount sold in Cedar Rapids. It is also located conveniently to the oil fields and has advantage of very low freight rates and can manufacture gas at a very low price. Peoria had prior to five years ago two companies competing for the business and at one time gas was sold as low as 50c a thousand. They are now selling at 90c, and the gas there is 17 candle power. Evansville, Covington, Ann Arbor and Port Huron are all near the coal fields and the coal is very cheap.

Cross-examination:

I got the figures for the Exhibit No. 14 from the audit of Mr. Kellogg (plaintiff's Exhibit 25). All the items of the cost of manufacture and cost of distribution coming from that source. I looked over the books of the company and discovered the manner in which they were kept, and knew that Mr. Kellogg was making an audit of the books.

I stated on my prior cross examination that the rule I used with reference to the values of the buildings was on the basis of new buildings for all intents and purposes here, but I have made certain deductions that would apply to the present buildings; the rule would apply to new buildings. After figuring upon what would be the value of the buildings if they were new, I made a deduction such as in my judgment I thought right. I don't know when the shop building was erected, but in making the deduction I took into consideration the present condition of the buildings and formulated in my mind, as well as I could, about how long I thought the building would be useful for the purpose for which it is now being used. I can say the shop building will be useful
406 at the outside not to exceed ten years. I valued it at $1,500, a new building would cost $1,750 to $1,800.

I do not know when the store building was erected, but in ar-

riving at its value took into consideration the needs of the building and its adaptability to present use and did the same thing with reference to all of the buildings. I did not take into consideration the original cost of this building. I am not applying my table of depreciation as to what has existed in the past; it is with reference to future needs. My depreciation does not begin at the time the article was purchased but at the present time. I think there is no particular difference in depreciation between old and new machinery. I gave the life of the holders at 33 1/3 years. The old holder has been in use 23 years, and within less than eight years that holder will have been abandoned or removed, because it occupies ground too valuable for that size of a holder. I would estimate that if a new holder was placed in that particular spot today, within a period of 33 years it would become obsolete or unfit for use for the purposes for which it is now used. The present value of that holder is $15,000.00 as I gave it, and the depreciation in the next ten years will be very much more than in the past ten years. If I was to apportion the depreciation among the three factors applied to the small holder, I would say one-half of it would be on account of obsolescence, one-fourth inadequacy, and one-fourth physical decay. I am applying this depreciation to this particular holder in its particular condition. The physical decay as applied to a gas holder in Des Moines is somewhat greater than in Cedar Rapids and Milwaukee, due to the character of the fuel used.

407 If the same character of fuel is used and the same product of combustion starting the gas works, I would say that the same physical decay would follow in each place.

When I figure depreciation on cast iron pipe at 2 per cent, I am giving it an ordinary life of fifty years.

Q. You think it was fair to both the consumer and the gas company to use one table of depreciation as applied to the running expenses of the gas company and deduct that each year, but when you come to value that plant, to totally disregard that and put, very nearly, a value of the plant as new without regard to the time that the plant had been used.

A. I do not allow one rule for the future and altogether a different rule for the past, and I used my rule with reference to depreciation every time that I commenced to establish this valuation, but in making my valuation I didn't inquire how long the different articles had been used, but took them in their present condition and present value to the company and the people of Cedar Rapids. As a scientist I would not ascertain the life each part had run and then figure out the actual value, because if I were to do that I would go into the accounting business instead of remaining in the engineering business. As an engineer I have used my judgment as to the present value of the plant and have applied my rule for the future irrespective of how long these properties have been used.

I do not think the court would be warranted in disregarding my values of these properties.

Take the retort house. I don't care when it was built. It makes no difference. I can see the retort house and see how long it is

adapted to its present use and about how long it is going to
408 stand there and I don't care when it was built. I figured the depreciation on the retort house would be 2½ per cent., or that it has yet a life of 40 years. I would divide my depreciation on the retort house and other brick buildings adjoining it about as follows: Two-fifths inadequacy, one-fifth obsolescence, and two-fifths physical decay. I would say that a new retort house of the same character as the present would cost from $8,500 to $10,000, for the present character of buildings; that would not include the addition that has recently been put on to accommodate the water gas apparatus, which I did not include in my estimate, because it has been put in since this action was commenced. No. 6 of my schedule is the boiler house, 22 x 27 and 9 feet high. That building would cost new probably $1,000.00. It has been built not to exceed three years I would say. It holds the two horizontal boilers. I valued the building at $900.00, and I think it is fairly worth that amount for the purposes for which it is used and arranged. The principal use for which it can be applied in the near future will be to increase the space occupied by the coal gas apparatus, in No. 8, and in that case, I think it would be entirely a case of being too small. It looks to me that when the time comes for extending and widening the retort house it will be necessary to remove that building entirely and in my judgment that will have to be done within ten years. On that particular building I would divide the depreciation three-sixths for inadequacy, two- sixths obsolescence and one-sixth physical decay.

I do not know when the meter and office room was built, but would judge that it has been built within a period of ten years. I did not figure what a new building of like character would be worth.

That room is included in the building occupied by the coal
409 gas apparatus and designated as No. 8 on the blue print. The retort includes Nos. 7, 8 and 9. It includes three rooms, the retort house proper, the space occupied by the water gas apparatus, and the space occupied by the boiler room and meter room, indicated here on the plat as No. 7.

(E. G. PRATT further cross examination.)

In Exhibit 15 I give the total gas sold and used by meter as 92,306,100; this was obtained from the auditor's report, and represents as I understood the amount of gas sold and consumed in Cedar Rapids. The item under the head of expense includes all the expense of manufacturing and distributing gas in the city of Cedar Rapids for the year 1906. The receipts for that year were $96,593.78. The residuals amounted to $17,287.58, and I think the gas that was sold to the consumers at Kenwood and Marion are not included but are included in the 8,457,900 c. f. of unaccounted for gas.

Q. To ascertain the correct amount which gas actually cost the plaintiff, it would be proper to deduct the 38.1c. per M c. f. for the cost of manufacturing for the amount that was actually sold in Marion?

A. I would hardly think so. I would consider Marion and Kenwood as being two consumers, and would charge them at the rate of $1.15 for the gas or whatever price the gas is at Marion. I would treat them as two consumers and add the receipts from the 1,473,000 cubic feet of gas to the total receipts of the company. If 92,206,100 c. f. of gas is the metered sales for Cedar Rapids, then there must be other metered sales for Kenwood and Marion. So far as the 1,473,000 c. f. of sales to Marion is concerned it would affect my figures in Exhibit No. 15 with reference to the cost of manu-
410 facture to the extent of three-tenths of a cent as to the cost of the gas in the holder. I figured the cost of the gas in the holder to be 38.1c. The gas that I found in the holder when I made my inventory, I placed at $1.00 which was an arbitrary amount and before I knew what it cost to put gas in the holder, and would be a little out of the way. If you compute the gas that went to Marion at $1.25 you would have $1,841.25 to add to the receipts of 1906 of $96,593.78, but I don't see that that would make any difference in the cost of the gas sold. It would increase the 92,000,000 but I have not used that as my divisor, though I understood that the company was selling gas to Marion and Kenwood and that that was to be excluded. I knew it was not excluded when it came to paying for coal and labor and such bills.

Q. If the works have to be increased and new apparatus installed to take care of the consumers in Kenwood and Marion, do you think that should be charged, with interest, to the consumers of Cedar Rapids?

A. I do. They should pay their pro ratio of it.

Q. Assuming that the consumers at Marion, during 1907 consumed five million feet and that the consumers at Cedar Rapids consumed 100 million feet, would you say that one-twentieth of the expense of operation and all other items should be charged to Marion?

A. No, sir. No more than one-twentieth of the cost or expense were charged to some large consumer at Cedar Rapids, because Cedar Rapids is the manufacturing point, and sells to this consumer at Marion just as it does to any large consumer, for instance, the oat meal mill. I think it should be credited with the receipts. I think that one dollar would be about right to charge at the
411 corporation line, keeping in mind that they are supplying one large consumer. I think the item of $3,102.03, cost of leakage, is a proper item to include in the general expense of manufacturing and distributing gas, on the other side of the ledger it goes into the cost of manufacture, in the net cost of gas .031c—it is in the gross amount $55,759.49, part in the coal, labor and supplies—it is in everything that enters into the cost of putting gas into the holder. Mr. Kellogg's method is entirely different from mine. He used as a divisor the gas sold and I use the gas made: it is simply a different method of getting at it. He accounts for the leakage by using as a divisor the gas sold. The item of $18,610.64 on Exhibit E of Exhibit 25, corresponds to my item of $15,407.62, and the difference between those two items is what I have as leak-

age, $3,202.03. One of them is not correct, unless one contains some item that is not in the other. I took my figures from the advance sheets of Exhibit 25.

In my Exhibit 15, I say that the net income is $15,409.62, after deducting the interest on the floating debt and the interest on the bonds.

Kellogg takes the interest on the floating debt and bonds in Exhibit E. When he gets the figures $18,610.64, he certainly makes no deduction for leakage. The auditor's account and mine check out exactly. The auditor's gas in the holder is 41.05c., and mine is 38.10c; my distribution is 34.34c.; he includes nothing for leakage, making the cost at the burner 65.08c., and 65.07c. in my case. For the cost of gas in 1905 I have the total cost of manufacture less residuals, $30,665.77, cost of distribution including leakage, $21,612.91. To get the cost per M c. f. of gas distributed you divide this amount by the amount sold, to-wit, 77,782,300 c. f. You
412 have to use one divisor to get the cost of manufacturing and another to get the cost of distribution. In the cost for 1906, Mr. Kellogg's cost in the holder is 39.04c., for distribution 23.07c.; my cost in the holder is 35.06c., and distribution 23.30c., total 58.36c.; but it don't have leakage of 4.04c.; cost 62.71c., just the same as his exactly. You don't sell your leakage, but you have to account for it, it is made.

In Exhibit 14 I put in the gas used at the works at the cost of manufacture. You can't discriminate between a consumer who lives near the works and one who lives a distance therefrom. In this case I would say that the cost of distribution should be added to the cost of manufacturing the gas used at the works and office for the company is a customer. All that is added to that side of the sheet in making up these figures, adds a per cent. in the cost of gas sold and would increase the cost and the same is true of leakage. It increases the cost to the consumer only in so far as the legitimate conduct of the business is concerned.

In my Exhibit 14 I have added an item of $10,000 for depreciation for the year 1905 and also have figured repairs and renewals in addition; I suppose there were some repairs and renewals.

Q. When you put that in did you know that the company had paid out and charged for repairs and renewals that year $15,000.00?

A. No. I didn't know any $15,000.00 had been charged to repairs and renewals. I have one item of $5,627.00 for apparatus in 1905; that is the supply that was commenced but not closed before the end of the year. I also have renewals and repairs to mains, services and meters $496.08, repairs of all machinery $474.72.
413 The auditor has practically $9,000.00 for repairs and renewals that year, including repairs in the purifying house; he has $6,000.00 for distribution expense, which is another item; I didn't include all those items he has included in that sum for materials and gratuitous labor on new business in the repair and renewal account.

The interest on bonds may not be an item to be taken into consideration in ascertaining the cost of gas but it has to be provided for

before the stockholder has any return from the company. If the company had $300,000 of indebtedness the interest on that debt would have to be taken care of and taken care of in this way and if the indebtedness is large then the dividends to the stockholders are correspondingly low. I think the interest should be included in the cost of gas because the company has to make this loan for the benefit of its consumers; it didn't make it for the benefit of the company and therefore it should provide for the payment of these bonds. If the management of the company are so foolish as to bond its business so completely out of existence as you have indicated by $500,000, they are certain depriving themselves of the benefits of the company for somebody else.

On Exhibit 14 I have figured a profit of 35c. per M. c. f. This is a proposition I have heard discussed by gas men and by people interested in gas property. Some of them base their calculations on a basis of 8 per cent., and some on 6 per cent., but I think that I would add 35c. per M. c. f. as a fair profit. I have also charged interest on bonds 5c. per M., because in this case the bond issue is small. I think that a large bond issue would reduce the profits below 6 per cent.

Assuming that the cost of coal is what I know it has been during the year 1907, and assuming that repairs and depreciation
414 would be no more than in 1905, and assuming that you got about 105,000,000 c. f. of gas, it would leave about $14,000.00 for the bondholders and stockholders; but it is only an assumption.

Q. In making the inventory of the company's property you included the $5,627.00 which is included in your report as operating expenses, is included as capital?

A. Yes; the item here indicates the repair and you notice in my inventory I have included $5,000.00 as the value of the purifying boxes.

I have stated that the depreciation on the water gas apparatus is 10 per cent., that is, that the ordinary life of a water gas apparatus is ten years. I placed the value of the water gas set at $5,000.00. I don't know that it has been in use over twelve years; it can be put in condition to operate. Perhaps its entire value has been replaced by the consumers by charging 10 per cent. depreciation, if it goes back to that time.

I can only answer as to what the life of a gas plant such as this —, basing it on my experience; I would take the whole plant not to exceed fifteen or sixteen years; you could single out some items that would be in use longer than that and some that would be destroyed. I testified in Des Moines when asked the ordinary life of a plant. That is a different question. I took up some mains, in putting in repairs, the first mains laid in this country, and they were as good as new. The tar-y substance of the gas seemed to preserve the pipe," and that testimony follows up the experience I had. I would like tot say further, that pipe was not relaid; it was disintegrated to that extent and my definition had reference to the pipe and not to it as a useful commodity. It had been in the ground 50 years.

415 When I use the words "physical decay" I have reference to decay from natural causes, and I think there would be quite as much depreciation in pipes from inadequacy. I do not know that gas engineers place the average life of a gas plant at forty years. I don't know any one who places it at from thirty to forty years.

Q. What do you think is the life of this plant?

A. Some portions may go out in one year. When I speak of a plant I consider the whole manufacturing and distribution system of the plant. I have already explained that the shop and that cluster of buildings indicated as Nos. 1 and 2, in my judgment, are of short duration, because of the fact that the retort house and water gas house will in a short time have to be extended.

There is a liability of the price of oil advancing to that extent that it may become necessary to make coal gas exclusively. If that is so the retort house would have to be revised and that might go next year or not for ten years. The price of oil has advanced steadily, but so long as the price of oil remains the same as it has been during the past year there would be no danger from that. I think the No. 2 holder will have to be abandoned entirely within a year or two. It is being used now for a tar well or tank.

The works are in a very good state of repair and preservation now.

Q. Assuming a new holder like No. 2, would cost $9,500.00, and that it was built in 1872, the depreciation on that would be $9,575.00.

A. I did not say it had no value, because it has a value.

416 There is a tank there. I could not raise that holder to see how much it would cost to make it operative. There is a tank there and I think it has a value of $5,000, a little more than the (tank of a holder) costs. It may have been out of commission a year or five years.

The water gas apparatus is worth $4,500.00 to thoroughly repair and put in operative condition. The rule I apply to the plant would allow of a salvage value; and in some cases it might amount to 50 per cent. of the value and in others it wouldn't.

Q. If the holder had been in use about thirty-three years and it still had a value of $5,000.00, then you have a salvage value at the end of the period of about half the original value?

A. As shown by the figures you have, and the same is true of the water gas apparatus at the end of ten years. As to the buildings it would cost more to tear them down than they are worth.

I would say that the depreciation on the yard connections would be four per cent. I figure a life for them of twenty-five years. I think that inadequacy would probably amount to fo-r-sixths of that amount, obsolescense one-sixth, and physical decay one-sixth. The water gas apparatus I would figure one-half inadequacy, and one-half decay. Obsolescence might be an element in that but I wouldn't consider it.

As long as they are not using the water gas apparatus and benches not now in use, I would be charging under my rule the depreciation on something not being used.

Q. If half of these things could be eliminated, half of the things in value could be eliminated and the company could still

417 produce the gas, your depreciation would be cut in two?

A. If it could be done, yes, sir. And then it would only

be necessary to provide for half of this fund of $15,600.00. The depreciation is not applied to anything that is not being used or could not be used. I would not keep any apparatus on hand after it became junk. If they are not using it at present and they are not going to use it I would then eliminate that item. The time will come when they will use it, and I did not throw aside the old water gas apparatus as junk because it has a present value.

On the boilers and stock I would divide depreciation as follows: One-half physical decay, one-fourth inadequacy and one-fourth obsolescence. The scrubbers and condensers, four-fifths inadequacy and one-fifth obsolescence.

Q. I hand you a paper with a black substance in it, and ask you if you know what it is?

A. It looks like lamp black. If the amount shown to me was found in a Lindsay burner after having been on a jet connected with the gas supplied to this system, I would say that that had nothing to do with the purifying of the gas. I would say that the illuminating power of the gas was very high and the quantity of air taken into the burner was too low to get perfect combustion. It has nothing to do with the quantity of the gas or the purification. It has to do with the proper mixture of the gas at the burner. That is lamp black that has formed on the burner. In that case the mantle becomes denser and the gas is converted back into a solid. It has absolutely nothing to do with the purifying apparatus.

418 On the wrought iron mains I would divide my depreciation of 6 per cent., and place three-sixths for inadequacy, two sixths obsolescence, and one-sixth physical decay, and the wrought iron high pressure main I would divide in the same way. Cast iron I would distribute two-sixths obsolescence, one-half inadequacy, and one-sixth physical decay, and paving the same way.

The paving is that which is laid over the mains and services. The company did not pay for the paving but if the pipes are relayed it will have to pay for relaying it. I understand *the* the company has paid for some paving where it has laid pipes and services it had to take up the paving.

Q. You have $36,291.00 in your inventory for value of paving over mains and $7,289.00 for paving over services, assuming that practically all of that was laid after the gas pipes were installed, do you think that that item should appear in your inventory.

A. I do, yes. I think also that depreciation should be figured on it, without regard to whether the pipe was laid prior to or after the paving was laid.

In arriving at the depreciation I would not take anything off on account of appreciation of the real estate, because if an individual or firm has anticipated its needs far enough in advance to acquire a piece of land, that has increased in value, that is their own gain, and I think a rate should be permitted that would allow the owner a profit on that increased value of the real estate, for they would also take their chances on the property depreciating, but I don't think it would have been lessened from the original cost of the ground so

long as the gas works were there. The price the company
419 paid for the land or a part of it two years ago, has nothing to do with its value today.

Q. What would you say the pressure had to do with the amount of gas consumed as registered by the meters?

A. That would depend entirely upon what apparatus or burner the gas is used at. If used in a stove, high pressure is more economical up to a certain point, because it increases the combustion and enables the stove to do the cooking at a lower pressure. If the pressure was so low at the time of cooking a meal that it would take an unusual time it would take more gas to raise water to a certain temperature — where the pressure is normal. If it should appear that in portions of the city the pressure was in such condition that the consumers of gas experienced difficulty in getting meals, it would cost the consumer more than if the pressure was normal, and if the gas company had money enough they should lay a main and give an adequate supply.

Q. Did you adopt any rule with reference to the relative value you put on these and on new works.

A. I didn't. I sized up the articles there in the shop and placed against each the value for those things that I knew the value of. In cases where I didn't know the value I took the trouble to go to the shop or the concern selling such machinery and apparatus. I had no reference to Mr. Steinwedell's prices. I didn't see him after he came here, I did not assume his prices, I heard them read and supposed they were prices for new material. Probably the difference in his prices and mine would be in the fact that the article valued had been used some.

There are evidences of one of the benchs of nines having
420 been filled in 1907. I understand that a part of the material was on hand in 1906 and if it was put in — 1907 it wouldn't be proper to charge it to operating expenses of 1906 except that part that was purchased in 1906. I presume the material went into the store-room and was bought because they could buy a car load cheaper than a less amount.

I have figured that about 39,000,000 c. f. of gas should be produced from a bench of 6's before it should need repairing and about 57,000,000 from a bench of 9's. A bench of 6's full dept- costs about $2,800 and a bench of 9's $3,800.00. The benches of plaintiff *and* a full depth. The furnaces below the floor line should last three years. The arch proper that goes through the entire bench would last a period of ten or twelve years depending upon the efficiency of the bench at the end of the renewal period.

I put the value of the two boilers at $2,100.00. I didn't know that they only cost $1,474.95. I think something was said about their having been used for a short time before they were put in. I based my calculations on what new boilers would cost and the fact that they cost only $1,474.95 would have made no difference in my valuation. On the scrubbers and condensers I think the price I have made may not be very far from new apparatus, and same is true of the washer, scrubber and ammonia concentrator. The station

meter I knew had been tested and I knew its relative condition as to being a correct measuring machine, I valued it at $2,100.00, a new meter costs $2,690. I didn't apply any rule of depreciation I simply took the meter as I found it.

I don't know whether the engines were purchased new or second hand, they seemed to be in good condition, but had been
421 used a number of years, I don't know how long there was a good deal of lost motion in the operation of the engines and I wouldn't say that they were working efficiently. The compressors are practically new. I do not think that one of them was purchased to take care of the increased sales at Marion, they certainly needed it. There is some lack of pressure about the works.

Q. Isn't it a fact that if the works were up to a high grade of efficiency you would not find that lamp black on the mantle.

A. That makes no difference. I could make lamp black on any mantle you have in the house. If there was lamp black found on the mantle, the burner wasn't properly regulated.

You would have to regulate the burner according to the pressure if you don't want lamp black in the bottom of the globe or on the mantle.

Q. The fact is something was wrong with the pressure.

A. Yes sir, and these compressors are needed to increase the pressure, they are intended to augment the pressure at the weak points in the system, that is, wherever the pressure is low it is cheaper than to run a small pipe.

The purifying boxes used by the plaintiff are of an old type they are not making them now and you will not find them in the stock list. The prices Mr. Steinwedell gave were for boxes of the same length and width and three feet deep. They wouldn't be almost double in capacity, but approaching that. I wouldn't want to pass my opinion on the judgment of plaintiff in buying, then, if I
422 were going to put in boxes I would put in new ones. In the operation of these boxes three are used at a time and their capacity would be practically 700,000 c. f. a day, of 24 hours.

The water gas mixes with the coal gas at the exhauster. It all goes through the purifiers together. These purifying boxes have about three times the capacity of the old ones. The annual capacity of the purifiers I have figured at 255,000,000. I do not think the large holder is of sufficient capacity to supply 300 million feet per year, you would have to figure it on its daily capacity. It is none to- large for the system today. You have to provide for two days' supply. The large holder would not be of sufficient size to supply the town up to 300 million consumption and the three present holders wouldn't for they could not be used together for holder purposes, you are keeping the holders filled all the time if you are sending out 500,000 feet a day and you can't keep up and have to put the gas in it. The large holders has a capacity of 500,000 and the day before Thanksgiving they sent out 460,000 feet of gas—It is not large enough now. I have seen gas sent out without a holder. I have sent it out direct from the works when the holder was wrecked, but it would be absolutely impractical for this new holder to send

out 225,000,000 feet per annum even if the old ones sent out 75 million in 1904. It could only be done in extreme cases and for a short time, it would be absolutely inefficient and unwise unauthorized and almost a crime.

I believe my rule of depreciation should be applied to the teams, I have bought good horses and wagons and know how long they last. I have said right along that my depreciation does not go back to the purchase of the article, but starts with the time the in-
423 ventory is made, and it don't make any difference how long the team has been in service.

The old purifiers which I have listed in my valuation as second hand materials will not again be used in the plant, they have been out grown entirely, they were probably used 18 or 20 years. I made my estimate on the high pressure main on the basis of it being three inches in size.

Q. You know that 26,760 feet of high pressure main, about half is along a street that is used mostly for farm-purposes?

A. Yes that very near the city limits they have a governor where they cut into the system in order to augment the pressure.

Q. As a gas engineer you would not say it was necessary to build that high pressure main to the city limits for the few consumers they could get on that line.

A. Not so far as the few consumers are concerned, but taking into consideration the few consumers they could get beyond the city limits in Kenwood and Marion, I think that would justify the building of the mains.

New specials cost 3.75c, I figured the specials at 3c.

In valuing the gas works I know I am very low in my estimate of these meters. The value of three light meters after taking off the discount is about $3.00. They would cost laid down in Cedar Rapids $3.25, I have charged 25c for freight. In my estimate for the value of meters wherein I have given the valuation of $11,895.00, I think the bare meter at $4.75 and $6.50 set which includes pipe connection, brass gas cock and brass nipples and made a dis-
424 count of 25c per meter so far as the bare meter is concerned without regard to freight. I didn't ascertain how long the meters had been used. I presume some had been used ten or twelve years. I don't think some of them would recognize their interior mechanism. It would cost $1.25 to $2.25 to reproduce the diaphra-m in a three light meter. If the setting of the meter had been charged to fittings account and the consumer had already been charged with it he should not be charged with it twice, and assuming that the consumer was so charged then the meter should be charged at $4.75. If it would be any information to you the Mass. Gas Commission allows $10.00 for each gas meter set from one light up to ten lights in valuing the property. There is a distinction between setting an old and a new meter. If the items of books, stationery, etc. may appear to have been charged to expense then they should not be charged in the inventory, but I don't know that they do appear as expense, I suppose the map was made the same as the making of a piece of new furniture.

I have testified here, as a gas engineer, to the cost of manufacturing and distributing gas in Cedar Rapids irrespective of knowledge got from books.

The conditions so far as the cost of gas in Cedar Rapids are not much different from Clinton, except the freight charges are a little higher, but the increased price for coke might off-set that, but I hav-n't inquired into the conditions at Clinton.

Redirect examination:

Q. You may state what in your opinion would be the cost of manufacturing, putting in the holder, the gas sent to Marion.

425 A. The cost of putting gas into the holder for Marion is just the same as it is for Cedar Rapids towit 38.08c the holder cost and the cost necessary to take it to Marion would be the power that is used in compressing the gas and sending it to Marion under high pressure and I estimate that at 3c for that which is sent to Marion. There would be some other minor items of expense connected with the actual distribution of that gas for repairs and renewals of mains and the whole brings a total of 45.42c per thousand cubic feet delivered to the city limits.

The valuation which I placed on the old water gas apparatus was $4,500.00 depreciation was 10 per cent or an annual outlay of $450.00. That piece of apparatus as it stands today, isn't usable because of necessary repairs. I asked Mr. Steinwedell what it would cost to put that apparatus in an efficient operative condition and he said $3000.00. So that to that estimate of $4,500 which it would take about seven years to pay for that by putting it in an efficient condition and one year to make the repairs, and they would have to have some other water gas apparatus during that time.

Q. You may state if it is necessary to have a larger capacity than the daily capacity of the plant.

A. It is necessary to make provision for the maximum demand. The works must be prepared to take care of emergency demands and also there must be preparation for an average capacity to allow for accidents and there should be duplication of enough of the machinery to permit of the repair of the parts that wear out without shutting down the actual manufacture of gas, and in any

426 public utility that is to be considered and it is good engineering practice to have every part of the apparatus in duplicate so that the company can furnish service, and there should be no excuse for being out of gas at any hour of the day. In the charge for the Marion plant I have taken into account all the holder cost. I didn't include anything in Marion that takes care of itself, but in arriving at the cost of the gas in the holder I took into consideration the piping and leakage. I don't think that any of the leakage should be charged to Marion more than that line that leads to Marion, the mains and services in Marion take care of themselves.

George T. Hedges.

The plaintiff then produced the witness GEORGE T. HEDGES who being sworn testified on direct examination as follows:

I am fifty-five years old, I live in Cedar Rapids am in the real estate business have been engaged in real estate business in Cedar Rapids and vicinity for twenty-five years, and devoting all my time to it. I am acquainted with the real estate values generally in Cedar Rapids. I know the location of plaintiff's property and am acquainted with its value. I know what part of the property is located in fractional block 90, original town of Cedar Rapids. I think that lot one (1), block 9, was worth January 1st, 1907, $4,500.00 and the balance of the lots in that block $3,500 each. The two lots in fractional block ten, $3,000 each and that the five lots in block 9, across the street and known as the annex I would value, at $3,500 each except the corner lot which I would place at $4,500.00.

427 Cross-examination:

Q. You and Mr. Averill have been associated together in a good many business interests for the last ten years.

A. Yes sir, we have been in one or two business propositions. I know he is president of the Cedar Rapids National Bank and am a depositor in that bank and I am sometimes a large borrower from the bank.

Our firm recently sold some property in the vicinity of plaintiff's plant, but I am not basing my estimate altogether on that. The lots I sold were not better situated than plaintiff's and I think plaintiff's lots could be used for a wholesale business, it is not a suitable location for a retail business. The tracks run along the entire length of the lots. The lots I sold to the Cedar Rapids Lumber Company have an alley in the rear and trackage from the Illinois Central Railway. They correspond with block ten. The corner lot sold for $3,000 and the inside lots sold for $2,500.00 each. I do not know what plaintiff's lots along the river would be worth as they were but sixty feet deep they would not be worth as much in proportion as if they were deeper, they might be worth on an average $300.00 a piece. In putting a valuation on these lots I did not take into consideration that there was a rip-rap wall in the rear and a stout wall on 1st street to protect the lot.

In my judgment the two lots in Fr. Bk. 10 next below plaintiff's two lots in that block are worth about $2,500.00 each. I don't know that they are all down on the bank of the river. Part of them is up high but the back end is not very high, the front part of the
428 lot is probably ten feet higher than the back part. If the company had title to only fifty feet of the lots I suppose they would bring $1,000.00 or $1,200.00 apiece. You can't buy the lots, with the small houses on them down below 9th avenue for $2,000. They are selling for from $3,000 to $5,000 each. I know of some without any substantial improvements that have sold for $3,000.00.

I don't know of any body who has sat up nights worrying over the meander line in that vicinity. I would not be afraid of any one disturbing the title to the property because of it. I have not heard of it before.

H. S. KEFFER, being sworn testified as follows on direct examination:

I am city recorder of the city of Cedar Rapids; I have in my custody the ordinance books of said city. The ordinance marked Exhibit 47, contained in Ordinance Book No. 1, is Ordinance No. 112, and is the original record of the franchise of plaintiff.

Plaintiff offers in evidence Exhibit 47, being the original franchise of plaintiff, and the same is admitted in evidence.

For Exhibit 47 see Exhibit "A" of plaintiff's petition.

Exhibit No. 48 is the original entry and record of Ordinance No. 437 found in Record of Ordinances No. 3, and is the extension of plaintiff's franchise. Plaintiff offers in evidence Exhibit No. 48, which is admitted without objection. (For Exhibit No. 48 see Exhibit "B" of plaintiff's petition.)

Exhibit No. 49 is the original record of Ordinance No. 752,
429 which is found on page 577 of Vol. 1, Codified Ordinances, and contains the record of the ordinances together with the certificate of publication.

(Plaintiff offers in evidence Exhibit No. 49, being the ordinance in controversy in this suit. For Exhibit No. 49 see Exhibit "C" of plaintiff's petition.)

Cross-examination:

Exhibit H is a part of the inaugural address of Mayor Connors, and is a part of the printed proceedings of the city council and a part of the official records.

(Defendant offers in evidence Exhibit "F" and Exhibit "H." To which plaintiff objects as incompetent, irrelevant and immaterial, taken subject to objection. For Exhibit "H" see page — of this abstract.)

Exhibit "F" is also a part of the official records of the city council.

Plaintiff rests.

430 *Testimony for Defendant.*

J. P. Messer.

The defendant then produced the above witness, who being sworn testified on direct examination as follows:

I have lived in Cedar Rapids thirty-eight years; am in the real estate business and have been for twenty-five years in Cedar Rapids. I am familiar with real estate values generally in Cedar Rapids, and I know the value of the real estate known as Lots 1, 2, 3, 4 and 5, Fr. Block 9, and Lots 1 and 2 in Fr. Block 10, in Cedar Rapids,

being the property on which the Gas works are located, but I would answer that it would be property which is hard for a real estate agent to value on its proper value—it is property that should be used only for certain purposes: it would be hard to sell on the market. In my judgment the lots named were worth Dec. 31, 1906, exclusive of the building, $1,500 each. My valuation is upon the depth of the lots only as I see them now. If the title to the lots only run west as far as the meander line on Exhibit "O" they wouldn't be of much worth or value to anybody. My estimate of those lots would be just what they are worth for some manufactory, and I think that they would sell for $1,500, but if they were as shown on Exhibit "O," that front piece of the lots would be practically worthless for any other purpose, unless a man went on and stole more, and it would be worth practically nothing. It wouldn't be suitable for a residence because you would have to cross two tracks to get to it. You couldn't use it for a factory because it would be too small. And from $300 to $500 would be a fair price for it, if that was all the land a man could get the title to.

431 Cross-examination:

I never looked the lots over for the purpose of placing a value on them. Two years ago I bought and sold lots just below "A" avenue. The lot was 60 x 140. The Illinois Central Railway owns it now. I bought it four or five years ago. Real estate in that vicinity has not increased since then: it has depreciated.

T. E. Ravenscroft.

The defendant then produced the above named witness who being sworn testified on direct examination as follows:

I reside in Cedar Rapids, am in the real estate and insurance business; have been in that business for about six years. During that time I have become familiar with the values of real estate in and about the gas works in Cedar Rapids, and know the value of the five lots between Seventh and Eighth avenue on the river bank, in Block 9. In my judgment they were worth December 31, 1906, about $30 per front foot, exclusive of buildings, and the two Lots 1 and 2 in Block 10, I think are worth about $25.00 per front foot. They are not up to grade and that made a difference. I took the depth of the lot as extending back to the rip-rapping.

Cross-examination:

I have lived in Cedar Rapids six years; about half of the real estate I handle is city property and the other half northern lands. The character of city property I have handled is mostly residence property. I never handled any property in the vicinity of the gas works. I did not hear of the Rock Island Railway paying $125.00 per front foot for property in the vicinity of that in controversy. I
432 know there was a good deal of property sold down there to the Rock Island for the purpose of erecting a large depot. I did not consider the gas company's lots as suitable for residences, when

making my estimate, but for gas works or any other purpose that they might be wanted to be used for of manufacturing nature. These lots would not be suitable for switch lines and trackage, for they are not deep enough from the looks of Exhibit "O." I would not think they were over 15 to 60 feet deep. My value was based upon the depth of the lots as they are. Those between Seventh and Eighth avenues would be on an average about 60 x 125 feet deep as they are now, and my value is placed on a vacant lot of about that size. I think a tract of land of this size up along the Milwaukee track in Centgal Park could be bought at the price I have named for these lots. I know what the options on some of that land are. I have no property for sale suitable for gas works for the price I have put upon this property, but I think property could be bought for that price.

J. W. Darr.

The defendant then produced the above named witness, who being sworn testified on direct examination as follows:

I live in Cedar Rapids; am a general contractor; have been in that business for twenty-six years, and have been building frame, brick and some concrete buildings. I have made an examination of the buildings of the Gas company, situated on Fr. Block 9. I took measurements of the buildings with a view of ascertaining what new buildings would cost. I got prices of material at the present time. If there is any difference, prices are a little higher now than they were in December, 1906, especially the labor part.

433 In my opinion it would cost to rebuild all of the buildings of the Gas Company on those lots, on December 31, 1906, including profit to the contractor of 10 per cent., $20,986.71. The Exhibit "P" with the prices given after each item is my estimate as to the replacement value of these buildings on December 31, 1906; I would be able to make a little profit on the work at this price.

EXHIBIT "P."

List of All Buildings Belonging to the Cedar Rapids Gas Light Company and Other Valuation.

By I. W Darr, General Contractor.

1. Shop Building and Store Room. This building is 46 feet 6 inches x 18 feet, and is of brick with stone foundation. Galvanized iron and tar paper roof.

Valuation.

Stone foundation	$275.20
Brick walls (96 M.)	1,152.00
Sills	14.00
Excavation	10.00
Galvanized iron roof, 18.56 sq	120.64

	Tar paper roof, 10½ squares	52.50
	7 iron trusses, 28 feet long	280.00
	6 iron pieces	20.88
	Windows, 8; doors, 5	78.00
	Floor	145.74
	Hardware	15.00
	Lumber	37.50
	Plastering	73.00
434	Carpenter work	50.00
	Total valuation of building	$2,324.46

2. Purifying Building. This building is 49 feet x 60 feet x 23 feet, with brick walls and gravel roof, and a 16 foot basement.

Valuation.

	Concrete foundation	$1,449.00
	Brick, 160 M	1,392.00
	Excavating	150.00
	Cement floor, 3,000 feet	240.00
	Sills, 136 feet	68.00
	Lumber, 11,500 feet	287.00
	Hardware	15.00
	Windows, 28	150.00
	Doors, 6	42.00
	Carpenter work	125.00
	1 truss	75.00
	12 "I" beams, 26 feet long	144.00
	36 columns, 9 feet long	486.00
	Bolts	3.60
	Gravel roof, 31 squares	155.00
	Total valuation of building	$4,781.60

3. Coal Shed. This building is 46 feet x 78 feet x 18 feet high on one side and 28 feet high on the other side. It has galvanized iron roof, and the sides are planked with 3 inch plank.

Valuation.

	Lumber, 16,150 feet	$403.75
	Trusses, 11	88.00
	Iron roof, 41 squares	268.00
435	22 iron "I" beams, 28 feet long	302.64
	11 iron rods, 28 feet long	29.65
	Concrete foundation	36.60
	Carpenter work	200.00
	Total valuation of building	$1,328.64

4. Retort House and Water Gas. This building is 133 feet x 36 feet x 21 feet. Has brick walls, cement floors; iron and slate roof.

Valuation.

Concrete and stone foundation, 4,130 feet	$826.00
Brick, 192 M. (17 inch wall)	2,090.04
Sills	50.00
Excavation	200.00
Cement floors	120.00
15 iron trusses	825.00
Ventilators	54.00
44 flat iron bars	289.25
Beams, 22	233.30
Angle iron	60.05
Railway iron	81.00
Bolts	2.00
Lumber	12.00
Doors and windows	132.00
Iron roof	68.25
Slate roof	427.00
Iron floor	1,129.22
Carpenter work	50.00
Iron partition	56.00
	$6,685.11

436 5. Pump Pit. 10 feet x 12 feet x 7½ feet.

Valuation of this building is $107.40

6. Tool House.

Valuation of this small building $54.00

7. Coke Shed. This building is 32 feet x 48 feet x 20 feet. It is open on three sides, and only boarded part way down from the top.

Valuation.

Lumber, 4,000 feet	$100.00
Post, 8	32.00
2 truss braces	50.00
Iron roof, 21 squares	136.50
Hardware	5.00
Carpenter work	50.00
Total valuation of building	$373.50

8. Boiler House. This building is 22 feet x 27 feet x 18 feet.

Valuation.

Stone foundation	$60.00
Excavation	5.00
Brick, 20 M	240.00

Gravel roof, 6 squares	30.00
Hardware	6.00
Doors	7.00
Windows	6.00
Lumber, 1,025 feet	26.00
Carpenter work	15.00
Total valuation of building	$395.00

437 9. Building Containing Meter Room, Office Room, Scrubber and Condenser Room, and Engine Room. This building is 84 feet x 31 feet x 18 feet. It is of brick, with shingle roof and cement floors.

Valuation.

Stone foundation, 4,100 feet	$820.00
Excavation	60.00
Brick, 120 M.	1,440.00
Cement floors, 2,400 feet	192.00
Sills, 70 feet	35.00
Shingle roof, 7 M. feet lumber, 27 M. shingles	273.00
Carpenter work	120.00
Windows, 12; door, 6	125.00
Plastering and painting	125.00
Hardware	15.00
	$3,205.00

10. Barn. This building is 24 feet x 30 feet x 32 feet. It is of brick, with stone foundation.

Valuation.

Stone foundation, 1,000 feet	$180.00
Sills, 51 feet	25.50
Brick, 62 M.	744.00
Excavation	15.00
Lumber	165.00
Roof, 8 squares	40.00
16 windows; 3 doors	125.00
Carpenter work	100.00
Hardware	10.00
Total valuation of building	$1,404.50

438 11. Roof Over Driveway.

7½ squares	$37.50
Lumber 1,000 feet	25.00
Total valuation	$62.50

12. Paving under Scale Roof and Passage.

Valuation $67.00

13. Roof Over Scales.

Valuation $90.00

Total.

1. Shop building and store room	$2,324.46
2. Purifying building	4,781.60
3. Coal shed	1,328.64
4. Retort and water gas house	6,685.11
5. Pump pit	107.40
6. Tool house	54.00
7. Coke shed	373.50
8. Boiler house	395.00
9. Office building, etc	3,205.00
10. Barn	1,404.50
11. Roof over driveway	62.50
12. Paving	67.00
13. Roof over scales	90.00
Total	$20,878.71

I hereby agree to rebuild said buildings, or build new buildings of like character, material and dimensions, in Cedar Rapids, Iowa, at the prices above enumerated.

I. W. DARR.

The old shop and store room might be called three buildings. I have placed at $2,324.46. The different items are enumer-
439 ated in Exhibit "P" under the heading of Shop and Store Room, and the items as given and prices are the reasonable market value of the materials that go to make up that building. The purifying building would cost $4,781.60, but I would add to that $20.00 on account of the coping left out of my estimate. The items enumerated under the purifying building are the items that go to make up that building and the prices are just what I could furnish them for at the present time. It would cost $1,328.64 to replace the coal shed, being building No. 3; the retort house and cupola $6,685.11; the pump pit $104.40; the tool house $54.00; the coke shed $375.50; the boiler house $395.00; meter and office room scrubber and condensing room $3,205.00; barn $1,404.50; roof over the drive $62.50; paving about scales $180.00; roof over scales $90.00.

In ascertaining the value of the materials that went into these several buildings, I went to the contractor, for mason work, that follows that, and asked him what he would do the work for; after I got that price, I got the price of the iron from Mr. Carmody and Cedar Rapids Foundry, and the steel roofing for the building I got

from the man that put the roof on, and I also got the price of roofing and figured against him and the shingle roof. I took my own figures for that. I also had the contractor that put in stone walls and brick walls figure that and give me the cost, that is the way I always do when I figure a contract.

I would take the contract at this time to replace the building at the price named and have attached an offer to my estimate to that effect.

(Defendant offers in evidence "Exhibit P" to which plaintiff objects because the offer attached thereto is immaterial, taken subject to objection.)

440 Cross-examination:

I have never constructed in Cedar Rapids buildings of any size to amount to anything compared with these buildings at the gas works. I have put up a hundred buildings in town. I build houses, barns or frame store buildings or anything that comes along. I have been engaged mostly in building residences. I built a one-story brick and stone building, 80 x 100 ft. wall, 12 in. thick at Rock Rapids. That is the only brick building that I recollect now. I went down to examine the buildings. I have been down to examine them several times. I measured the iron work in the buildings and the foundation walls so far as I could. The foreman told me the walls were 16 inches in depth in the ground and that is the way I figured them. My line of practical work is contracting. I think I can do most any kind of building. I learned the carpenter trade, and have contracted for 24 years, with the exception of about four years.

I believe the prices are higher now than they were January 1, 1907. They have been higher the last summer. I don't think that cement has been a great deal cheaper this last year. I do not know the price of cement now per bushel or what it was worth January 1, 1907, or what it was worth in the summer of 1906. I never had anything to do as contractor with building where a large amount of brick was shipped in. I do not know the price of Chicago brick, or what it was worth in 1907. The price of dimension lumber in January, 1907, was about $25.00 to $30.00 per thousand, if it was not too long. There are no very long dimension lumber in these buildings. I measured them. There are dimension pieces 30 feet long. I saw the trusses in the coal shed. It would cost about $80.00 to make those. Those trusses are about at the top of the
441 building, probably 27 feet from the ground. I did not get up there to examine them. There are eleven trusses and I think they are about 30 feet long. I don't know how many pieces there are bolted together in those trusses. I sat on the ground and looked at it and figured it after taking the width of the building. I think the trusses are made of 2 x 10 timber. I did not get up to see whether they were bolted together or not. There are eight inch eye beams in this building and I should judge they are 28 feet long. I don't know how much the beam would weigh. I can't say how much iron was worth in "I" beams at that time. I don't know

whether they weighed 17 pounds or 60 pounds to the foot. There is a floor in the coal shed made of two-inch plank, for which I allowed $25.00 per thousand feet for two-inch plank all over the building and 4 x 4 nailing pieces every 4 feet all over the building. A little part of the sides is of inch lumber and on the side next to the river, possibly 7 feet high, the sides are three-inch plank, then an opening to shovel coal in, then the rest is two-inch plank. I figured the sides solid. I didn't measure the height of the three-inch plank; these planks are fastened by being set inside the flanges of the "I" beams. I didn't figure how much it was worth to saw the plank. I didn't figure that way, but figured the work on the building so much. I will not figure it now. I think anybody could saw those plank. One man ought to saw and fit these planks in three days, so they could put them up. I don't know how many feet of lumber are on the sides of that coal shed, but I figured it. There are three trusses in the purifying room and they are about twenty-three feet high. I allowed one thousand feet of lumber for each truss and I did this by looking at the trusses from the inside of the building and I figured the lumber in them at $25.00 per thousand. The
442 labor I run into the labor part of the building and did not figure that labor separately. In my opinion the labor to build them is worth $15.00 for each truss, and I figured that up as a part of the cost of the building, that would make each truss cost somewhere about forty dollars. It would also take about forty pounds of nails to each truss. I figure the same values on this as I do on the other pieces of property, by a general scale of the cost of labor clear through. I could buy the lumber from the Hawkeye Lumber Co. at that price. I did not see that there were "I" beams inserted into the wall that the trusses rested upon and did not figure any such, if they are there. I can't tell what the distance from the basement floor to the floor of the purifying room is. I measured the columns in there; they are nine feet and "I" beams rest on them. The purifying boxes rest on the "I" beams; I don't know where the floor is with reference to the top of these boxes. I took the foundation walls as 16 feet below the brick work. I did not know that the foundation wall extends 6 or 7 feet below the basement floor of the building. The "I" beam is nine feet high. The stenographer has failed to put those in "Exhibit P"; they are 26 feet long. It is an 8-inch "I" beam, I think. Joists lay on the "I" beams 2 feet 10 inches apart, and the purifying boxes rest upon the joists. I figured a footing course for this basement wall of two feet wide, and a mason who always does my work figured it. I never built foundations for machinery and never had any experience in that line.

With reference to the retort house and water gas house, the outside walls are of brick and the roof of the water gas house is all iron and there are some "I" beams in there and some iron floors and wood floors. The retort house walls are of brick and continue
443 right on through the water gas house. There is a basement in the retort house. I did not examine the foundation under the retorts. I don't remember about the foundation under the machinery and didn't figure on that, but I figured the foundation under

the purifying machinery. Of course, all those refinery tanks are held up by those columns and the columns have a pier under them. We figured them four feet square and six feet deep. I never did any paving but I figured on 180 square yards of paving about these premises, between the coke house and the scales. It is block paving. I don't know exactly what it is worth to lay that paving nor what the brick cost per thousand. I have figured the corrugated galvanized iron roof on the coke shed at $136.50. I figured that at $6.50 a square, put on. I figured No. 4 iron. I took the foreman's estimate of the amount that is there, also the estimate of the man who put it on. I figured two trusses in the coke shed. I counted them. I am sure there are not four trusses in the coke shed. I don't know how much lumber there is in these trusses. I figured the two trusses at $50.00. The ends are boarded up and boarded part way down to the square. I did not figure any floor in the coke shed; I know that it has not a cement floor in it. There has been a floor, but it is nearly all gone now; there is once in a while something sticking up. The floor has been composed of cinders and I take it to be a little bit of tar. I never laid any gravel roofing and never had anything to do with anything of that kind, but have had it done. There appears to be a mistake on my estimate on the doors and also a mistake on the windows; I remember them. I figured the lumber for the barn at $25.00. I figured practically all the lumber in the buildings at $25.00 per thousand.

444 I made this estimate at the request of the city attorney. I built Mr. Good's house out on Nineteenth street, but did not build the stone work. I also built his barn and I have done other work for him; it would take a good while to tell, for I have done a good deal of repair work for him.

(Witness excused.)

(Direct examination on re-call of this witness:)

There was no mistake in my estimate so far as doors and windows are concerned. I find about 116 bolts in the trusses which I have not figured in my estimate, which would cost probably $5.00 per hundred. I had figured to use spikes in their stead, which cost about $2.50 a hundred pounds, and it would probably take a hundred pounds. These spikes would answer equally as well for the purpose as the method used of bolting them together.

In measuring the paving I merely stepped it off and estimated how many yards were in it; I have measured it since I was last on the stand and would add $20.00 to my estimate on account of value of the paving.

I was interrogated with reference to the purifying room and the height of the basement floor. It is 13 feet 3 inches from the ceiling to the basement floor. The concrete wall is 10 feet 10 inches above the cement floor, while in my estimate I allowed for 16 feet and I figured 22c. per cubic foot for building this concrete, and I know that it can be done for less than that. I have had rubble stone work done this year and in some places I paid 18c. per cubic foot laid in

the wall, and the contractor furnished everything. I figured the concrete and brick work in all the buildings just as though I was going to put up the building. I went to the mason contractor
445 and had him figure the brick and mortar and the price for putting them in at the present prices and did the same with reference to concrete work.

If there were "I" beams in the walls of the purifying house for the trusses to rest on, I would not change my figures of the value of the buildings on that account except to add possibly $12.00 or $15.00 for the 12-inch "I" beams that are in there—those I haven't down are eight feet long. I add that to my estimate; I would also add probably $15.00 on account of a truss. I left out in making up my estimate of the value of the barn. I got the value of the "I" beams from Mr. Carmody and Mr. Getty foundrymen, who are in the business of furnishing such materials.

Recross-examination:

The figures I gave for brick are from the brick layers and as near as I can understand there isn't any great difference in the price of brick, but I did not figure on Chicago brick any more than on Iowa brick. Chicago brick isn't much higher than other brick, but I don't know the price near enough to swear what it is.

In mixing concrete I would use one part of good cement to two or three or four of sand, and five or seven parts of crushed stone. It would make a great deal of difference in the cost as to how much cement was put in.

H. C. Ring.

The defendant then produced the above named witness, who being sworn, testified as follows on direct examination:

I am clerk of the District Court of Iowa, in and for Linn County, and have been for three years. I have in my possession the
446 records of the District Court of Linn County and have examined them since 1870 to the present time with a view to ascertaining the judgments that have been rendered against the gas company. I found judgments rendered as follows: "S. A. Sooms vs. Gas Company, $352.00, and $34.00 costs, satisfied May 10, 1897; also "C. H. Rank vs. Gas Company, $50.00 and $5.40 costs; and "Charles Crego vs. Cedar Rapids Gas Light Company for $1,000.00."

These are all the judgments I found against the company. (Here defendant had Records of Court marked Exhibits "Q" and "R" which contain the records of the above judgments and the same were admitted without objection, but it is not necessary to set them out herein.

F. J. Cleveland.

Defendant then produced the above witness, who being sworn, testified as follows on direct examination:

I am County Auditor of Linn County, and have been since January, 1907; prior to that I was deputy auditor for four years. I have

the assessment rolls for the Cedar Rapids Gas Light Company for the years 1903, 1904 and 1905. I find assessment for the year 1903 on roll No. 1692, signed by A. T. Averill (The Roll is marked as Exhibit "S" and is offered in evidence by defendant and is as follows):

EXHIBIT "S."

Assessment Roll Linn County.

"No. 1692.

Cedar Rapids Gas Light Company.

447 " Two horses, 3 years old, $200.00 actual value; two vehicles, $20.00; total personality, $220.00. Total value of real estate $98,800.00. Taxable value $24,755.00.

Lots 1, 2, 3, 4 and 5, Fr. Block 9	$90,000.00
Lots 1, Block 10	400.00
Lot 2, Block 10	400.00
Lots 1, 2, 3, 4 and 5, Block 9	8,000.00

This includes mains in streets and pipes; also 75 per cent. of new tank under construction.

STATE OF IOWA,
Linn County,, ss:

I, the Cedar Rapids Gas Light Company, do solemnly swear or affirm that the above is a full, true and correct statement of all moneys and credits owned by me, and that I have read the said roll of property listed or assessed to me, and that the same is a full, true and correct list of my taxable property, both real and personal, subject to taxation in this district, and all property which should be listed on this assessment roll to me or by me.

A. T. AVERILL.

Subscribed and sworn to (or affirmed) before me by —— —— this 26th day of May, 1903.

J. A. HILDEBRAND,
Assessor Cedar Rapids."

(The name of J. A. Hildebrand was stamped by rubber stamp.)

I have the assessment roll of the plaintiff for the year 1904, which is marked in this case as "Exhibit T." The signature to it is that of A. T. Averill.

(Defendant offers in evidence Exhibit "T.")

448 EXHIBIT "T."

Assessment Roll, Cedar Rapids Gas Light Company, No. 4926.

Total actual value of personality $280.00. Taxable value $70.00." (This roll has same affidavit as Exhibit "S.")

During 1904, the same assessment of real estate as 1903 was carried forward on the books for the purpose of taxation in my office and the assessment roll "T" is simply the assessment of personality I have also the assessment roll for 1905, which is marked Exhibit "U." the signature to which is that of A. T. Averill.

(Defendant offers in evidence Exhibit "U," which was received without objection. This exhibit is in the same form and contains the same words, affidavit and signatures as "T," except the amounts are as follows:)

"Actual value Lot 1, Block 9, $2,000; Lot 2, Block 9, $1,400; Lots 3, 4 and 5, Block 9, $1,400 each; Lots 1, 2, 3, 4 and 5, Fr. Block 9, $70,000; Lots 1, 2, Fr. Block 10, $25,000."

(It is unnecessary to set the exhibit out in full here.)

I think that is Mr. Averill's signature to the three assessment rolls.

Cross-examination:

I was not asked to ascertain what the plaintiff's assessment is for 1907. Mr. Good did not ask me to do that; he did not mention the assessment for 1907, at all and I did not look it up. I have the assessment for 1906, but the real estate was not valued that year.

449 *C. H. Campbell.*

The defendant then produced the above witness, who being sworn, testified as follows on direct examination:

"I am engineer for the Quaker Oats Company and have been for 16 years. I was formerly an alderman of the city and was such officer at the time of the passage of Ordinance No. 752, reducing price of gas to 90c, and I was all the time that I was a member of the council, chairman of the committee on light and water. I first became a member of the council in March, 1906.

With reference to making an investigation as to complaints of customers with reference to gas rates and quality of gas, we inserted advertisements in both daily papers for quite a length of time. I think it was a week. The result was we had quite a number of complaints, some 25 or 50 by mail, and a great many others in person, and some by telephone. I couldn't state the number now. (Here the witness is shown paper marked Exhibit "S.") I had no copy of Exhibit "S" at the time the ordinance was passed except that I read it or practically the same thing that was printed in the newspapers. I had no copy of Futardo's report which was the same in my opinion

as is contained in Exhibit "Y." My understanding was that the cost of manufacturing and distributing gas was 60c per M c. f. After the passage of the ordinance I saw Mr. Glenn Averill at my place of business quite frequently, from 2 to 4 times a week sometimes, and I never said to him that the council had been hasty and hadn't entered into the cost of manufacturing and distributing gas.

I was connected with the American Cereal Company at the time of their fire. The buildings were practically destroyed by the
450 fire. The boilers were afterwards purchased by Mr. Carmody. These boilers were in pretty fair condition after the fire; they were practically unharmed; the doors were warped a little.

Cross-examination:

I don't believe the boilers were injured at all; I think they were practically as good as they were before the fire. I went into the council in March, 1906, and left July, 1907. I got sick of the council crowd and left. I read what was published in the newspapers as Futardo's report. I couldn't say how long it was published before I went into office, whether 3 or 6 months. I never saw the report outside of what I saw in the newspapers. I don't know whether it was correctly printed or not, but I believe it was because those things are supposed to be correct. I don't know who Futardo is; he is an engineer that the Huston administration brought here. I don't know that he was an engineer, but I heard he was an expert on gas. I don't know that he ever saw a gas works; don't know where he lives, don't know his age or his standing in the community where he lives or anything about him.

We made investigation as to what people were getting gas for in towns of like size, wrote letters to Ottumwa, Joliet, Clinton, Council Bluffs and Des Moines. My recollection is the price at Clinton was $1.00. I destroyed the letter I got when I left the council. I believe the price at Council Bluffs was $1.50; at Des Moines $1.25. I am not competent to state what gas cost or how they should sell any other place. My judgment was based on the prices we got of the cities and this engineer that was here. My recollection is that the price at Dubuque was one dollar. We were not able to find a city in the state of Iowa where they were selling gas for less than one
451 dollar; still we thought it ought to be sold for 90c. In the notice we published the committee advertised for information, or complaints against the Gas Company; it was a general thing and not a specific case. I brought up this matter of the gas question. I put the notices in the paper and they were signed by me. The complaints were to be lodged with the newspapers or with any member of the committee.

Q. It was sort of a conspiracy between you and the newspapers?

A. No, it wasn't. I showed in the neighborhood of 25 or 30 of these complaints to Mr. Averill and the company. I can't give the names of any of those who complained; they asked me not to disclose their names. Dr. Walker was one and W. E. Holmes of the Gazette, was another; they are the only ones I can recall now. The complaints related to the service, pressure and everything. I talked over

these complaints with the Averills and they satisfied me that some of them were without merit, but not all of them. I think that most of the complaints were made before the high pressure line was put in on the west side of the river and related to pressure. I didn't tell Mr. Averill to get up a $1.10 ordinance. I took such an ordinance which he prepared and I think I told Mr. Averill that I was willing to do anything that the council was and that anything the council was willing to endorse was satisfactory to me; that I was willing to do anything to bring the people and gas company together, and get matters settled up; this was in the summer of 1907.

Redirect examination:

452 Exhibit "V" is the report to the city council about this matter. (Defendant offers in evidence Exhibit "V," which is as follows:)

EXHIBIT "V."

CEDAR RAPIDS, *Nov.* 30, 1906.

To the Honorable City Council of Said City:

We, your Light and Water Committee, beg leave to report on the gas question as follows:

We have inserted in the Cedar Rapids daily papers and ad. asking for complaints regarding the gas question, whether the troubles were caused from lack of pressure, poor quality, excessive charges or whatever else might cause the trouble. Up to six o'clock tonight we have received 24 in writing, telephone messages about 50, and verbal too numerous to mention. The general run of complaints of persons writing were: Pressure 4; quality 2; blows excessive 3. Regarding complaints over phone and those to whom we talked, all agree that the price is too high as well as having about the same trouble as those who made complaints in writing. We endeavored to get all to put complaints in writing but the greater portion do not desire to do so, fearing trouble with the company. This committee will with the aid of citizens and city council continue to make investigation and by the next regular meeting hope to have some definite information as to the trouble and hope they may get some relief. We have not yet called on the Company but will do so before next meeting.

(Duly signed by committee.)

453 My resignation from the council was not caused by any matters connected with the gas question or reducing the price to 90c. My recollection is that at Peoria they were getting 90c gas at the time I wrote. The ordinance was handed to me by Mr. Glenn Averill about six months after Ordinance 752 was passed.

C. J. Fox.

The defendant then produced the above named witness, who being sworn, testified on direct examination as follows:

I am 69 years of age; have lived in Cedar Rapids since 1875; am superintendent of the city water works; have been superintendent and engineer since 1878.

The street railway system was changed to an electric system about fifteen years ago, and usually the streets in which the street railway lines run have the water mains on one side and the gas mains on the other. The tracks are usually placed in the center of the street and our pipes are on the side and in ordinary streets; our pipes are about thirty feet from the tracks. In making the joints between the rails they endeavored to make it perfect so as to prevent electrolysis, and I was authorized officially to give notice to the street railway company that they would be held responsible for all damage done to our pipe line by electrolysis, and we sent the notice direct to the street railway company. We have experienced no difficulty with reference to electrolysis; I never noticed it but once and that was twelve years ago at Third street and Twelfth avenue. We were taking up some old mains and putting in new and we found there some thirty feet of pipe that was spoiled by electrolysis, and we took it out as far as the iron was affected. We have fifty-three miles of mains, and there were six miles of mains when I took charge
454 of the works, and I have had charge of the entire plant since then. I have seen electrolysis in other places.

The Gas Company uses the same cast iron pipe as we do except that it is lighter than what we use and they usually purchased it without it being coated on the inside. From my experience with cast iron pipe and from samples I have taken out in the last two or three years, I would judge that it would last one hundred years. Exhibit "W" is a piece of cast iron cut from a water pipe, that was put in according to the books in 1876, and I considered it as good as when put in; the tar is not off of either side, and it shows no rust whatever; it is not even pitted.

(Defendant offers in evidence Exhibit "W" which is received without objection.)

At the present time the market is not furnishing wrought iron pipe unless specially ordered and we have found where we used it in the water system service, the life has only been from twelve to fifteen years; this refers to the standard thickness of pipe. With reference to the thick, high pressure pipe we have had some in for twenty years and as far as outside appearance is concerned it is perfectly good. I could not say how much longer it would last. I could not get at the interior and the water would have an effect on it on that side. We carry sixty pounds domestic pressure and at the pumping station one hundred and twenty to the square inch.

I have noticed the plaintiff's men at times locating the gas mains and that they have some difficulty in locating them, and that they

did not always strike the pipe where they dug. We have a record kept of right where the mains are and we do not usually have to dig all over the street, which would necessarily increase the cost.

455 We have a regulation with regard to cutting off the water if the bill is not paid within a certain time, and have been working under that rule since July, 1903.

Q. Suppose you were permitted to furnish water or gas at a given rate, and you as superintendent felt that the rate was so low you couldn't give a discount therefrom, could you inaugurate a rule by which you could turn off the gas if the bill was not paid by a certain time, and what would be the effect and expense in operating under that rule.

A. There would be only one way and that would be to cut it off, that is if the discount was not given. In our business we have 4,200 customers that get a 15 per cent. discount on the meters and 2,000 are on flat rate. Speaking of the meter rates, I find in our case there is about $300 out of the $2,600 each month that has not been paid so as to get the 15 per cent. discount. Now we send out notices that if it is not paid by the 24th of the month the water will be cut off and we find we have but very little difficulty, and cut off only four or five a month. The financial effect would be worth over the 15 per cent. would be less what is paid for expenses of turning off and on. We charge a dollar for turning the water off and on, which the customer pays, and I think this amount would pay the expense to the company of doing the work. Take it on the ground that we are earning $60,000 a year and were giving 15 per cent. discount, which is $9,000; now in turning the water on and off it wouldn't cost half that amount. The cut off is at the house. We do not require a deposit or guarantee for prompt payment, but I don't know as to gas companies. I suppose such rules could be adopted; it would be feasible aside from the legal part of it. They would be a material

456 help to collection of the bills. We find that we have rules that are a help in running the business and making collections but in law they would not be of any effect. In my opinion the net result to our company, if the present rule of giving a discount was discontinued and a rule adopted requiring a guarantee and also enforcing the collections by cutting off the water, would be that we would get about $4,800.00 for work of cutting off the water and the works would save the discount. It would cost about half of the discount to enforce the collections. Assuming that you simply charged as penalty the exact cost to the company of disconnecting and reconnecting so that you did not make anything on it, then so far as the net returns are concerned the two sides would be the same.

I have examined all the plaintiff's books kept in their office, here in the court room to see the probable expense that the company should pay in the conduct of its office and collection of its gas bills, and assuming that half the manager's time is given to superintendence of the works and half in the office, and by comparing it with our office: the books are quite similar, though a little more to it than to ours in some lines, but on the whole are the same kind, except we don't use the loose leaf ledger, and they send out notices

which we do not—it would take half the manager's time at $100.00 a month, a cashier at $75.00 a month, bookkeeper $65.00, two office boys each $40.00. The office boys would make out bills, read meters and this would include books that would show where repairs are made, what kind of repairs and cost, and all items, all new construction work, and each item so as to be self explanatory.

Cross-examination:

There is such a thing as electrolysis. I have discovered it in one instance at least in the water mains, and have seen the effects
457 of it in other cities and in the American Water Association, and it was considered quite a serious matter at those meetings. It is liable to affect a pipe line at any time. The distance the pipe is from the railway makes a difference and you could get the pipe deep enough so that it would not have much effect. The average depth of the water mains along the street railway is 3½ feet covered. I think that the fact that the gas pipes are nearer the surface would tend to make them more subject to electrolysis than the water mains.

Papers were served by us on the street railway calling their attention to the fact that there was danger of electricity attacking the pipe and that they would be held responsible for all damage that would occur from that, keeping the rails bonded would keep the electricity from either pipe line. I would think the gas pipe would be more readily subjected to the current than the water pipe because nearer the surface.

To our customers having meters we give discount of 15 per cent., which is to induce prompt payment more particularly than anything else. From my experience, if you did not give a discount, it would require something more, some extra sum in order to collect the money, but there are two points there to be considered. If you shut off the water on the 10th of the month quite often you make ill feelings. In case of the gas company in competition with electricity, I would think that if the Gas company was harsh in its methods with reference to turning off the gas for non-payment it would have a tendency to create war between the company and customers and they would quit gas and take electricity for domestic purposes. I would say that a proper discount given on the rate is a very
458 nice way of collecting the rents. I do dislike to cut the water off from a man's premises, and I know if he did it to me I would never forgive him. It is not good policy to cut the water off and it does not tend to good feelings. It is my experience that in dealing with the public it is best to keep them all feeling good, and it makes quite a difference with the business all the way through and this is to the financial interest of the company. From a financial standpoint it is quite customary and proper to give a discount for prompt payment, but I have never had experience in the other way, and I couldn't say how it would work.

Assuming that the ordinance in controversy fixes the rate at 90c, without a discount, and makes no provision for penalty for prompt payment, in my judgment it would be necessary for the company to

make some discount below the 90c rate or add something to its expenses in collecting.

I think it would add to the working force about the services of two men at $1.75 per day, shutting off water and turning it on again.

We have about 2,000 water meters; the rest of our customers pay quarterly and get a discount of 20 per cent. for prompt payment. The making out of the gas bill in my judgment is about the same as the making of the water bills. It takes two men about one week each month to read the meters. The notices could be mailed to the customers instead of delivered, but if it was done by a man who was hired and placed in the office it would be a legitimate part of office expense.

Judging from the sample I produced I am of the opinion that cast iron water pipe would probably last 100 years. I have
459 found here in the city many mains that have become inadequate for the service and had to be replaced; the old pipes would have been sufficient in size for domestic use, but not for fire protection and we had to put some in four to six times greater capacity.

I would say that it would pay to take up 2-inch gas pipe that had only been in the ground ten years; they could save considerable by taking them up.

Some of the parts of town where we have different mains because others have become inadequate, are from works to "B" avenue, "B" avenue from Second to Sixth street, on Second avenue from Second to Sixth street, on Third avenue from Second to Sixth street, we laid 12-inch mains a year ago this summer at an expense of $18,000.00. They were mostly laid for fire protection. The original mains were used for the purpose of supplying customers and for fire protection, and became inadequate for the purpose, and we have places yet that should be strengthened for fire protection. The old pipes on account of size, not material, have become inadequate for the purpose for which they were originally laid.

I have my opinion that cast iron like all other things, is practically decaying from the time it is put in, like a house or a building. Exhibit "W" was taken from a 12-inch main.

We put in new lines because the old ones were inadequate so far as capacity was concerned. We give the discount for the purpose of bringing in the money as soon as possible. I have already stated that it would cost some to collect the rates without discount, but I think in this penalty of cutting it off, it would probably be made up.

I know the water works is in a different position with refer-
460 ence to the people from the gas company in that they don't have to go to the Gas company but can light their houses in other ways or sit in the dark.

I believe the discount the most popular system of collecting bills and the most largely used by corporations, and I would consider it to the financial interest of the company to make discount for prompt payment.

Redirect examination:

Exhibit "W" was cut from a water main yesterday with a machine for that purpose. It is a piece of cast iron pipe circular in form, taken out of the side of a 12-inch pipe, the convex side of the Exhibit is the outside of the pipe. Exhibit "V" is the notice that the water company sends out stating that the water will be turned off. (Defendant offers in evidence Exhibit "V," which is received without objection). We have had customers where we have cut off the water who were displeased but continued to use it—that is they paid up. Assuming that the rates were fixed so low as not, in my opinion, to allow a discount, to bring about an economical collection of the bills, I would have to have a rule that I would cut the water off at a certain date and the patron would have to pay a penalty for cutting off, and I would want them to pay two months in advance and put up a guarantee. I think in the first three months or perhaps more, there might be some trouble and feeling, but after that the people would drop in line. There would be no particular expense but what would be charged to them.

We dig up cast iron pipe, no matter how long it has been in the ground, especially if it is from 6 to 8 inches, and if you had cast iron pipe that was in the street only about 3 feet deep and hadn't been used very long and was taken up because it was in-
461 adequate, you would find a good deal of salvage in it. In making the extensions of the water mains the future was considered as well as the present. The future has been considered on the pipes we have laid for a city of 100,000 population.

Ernest R. Moore.

The defendant then produced the above named witness, who being sworn, testified as follows on direct examination:

I am engaged in the banking business as vice-president of the Fidelity Trust and Savings Bank; have been in the banking business for 16 years and in all positions from assistant bookkeeper to vice-president, and during all the time have had more or less supervision of the books and the keeping of books, and know salaries usually paid bookkeepers in Cedar Rapids to some extent during 1906, 1907, and think the tendency of salaries has been upwards. I have had no experience in gas business. I know what it costs to keep a set of books in Cedar Rapids, depending on kind.

I have examined the set of books of the plaintiff here in court, with ten consumers' ledgers with 1,000 accounts, on which it is necessary to make two entries to each customer each month, also cash book, trial balance, etc. If these were bank books of the same number of entries I would say that it would take the entire time of two book- — -ager's time. I think it would take more time to keep these books than a set of bank books for every individual account has two entries a month and a great many bank accounts have no entries. I think it would take more time to keep these accounts than a bank's of like number, but how much more I cannot tell. The salaries for work of this kind in Cedar Rapids would be a

reasonably good bookkeeper $75.00 to $100.00 per month,
462 and the third man somewhere from $35.00 to $50.00 per month. I have not included in this estimate the cost of reading 1,000 meters. I do not know how much time that would take, also the making out of notices and delivering to patrons.

H. L. Nehls.

The defendants then produced the above witness, who being first sworn, testified on direct examination as follows:

I reside in Cedar Rapids; am engaged in the real estate business; have had five years' experience in buying and selling real estate in the city to a certain extent, and have become acquainted with the fair market value of real estate in different portions of the city. At the request of the city, I examined Lots 1, 2, 3, 4 and 5, in Fractional Block 9, and Lots 1 and 2, in Fractional Block 10, where the gas works and holder are situated, and assuming the lots are 60 x 120 feet they would, in my opinion, be worth from $1,500 to $1,600, and possibly $1,800 each; $1,800 would be the highest estimate I could put on them.

Cross-examination:

I have been in the real estate business only about a year and a half on my own account. My first experience was with W. E. Dean, who was engaged in handling Minnesota lands and that was the principal part of my business. I worked for Dean four years, then went with Bolton & Co., who have a large real estate business in this city, taking charge of the farm department, and worked for Bolton two years, then for myself.

I assisted in selling one lot not far from the Gas works to R. I. Safely for the Rock Island Railway, the lot had a house, was
463 60 x 120 and sold for $1,500. I handled no other property in that vicinity. I have looked at and obtained prices for other business property in Cedar Rapids, and was interested with a buyer, but they did not buy. I never had anything to do with buying or selling property down there (near the gas works) for manufacturing purposes.

Redirect examination:

The lot I spoke of was one I assisted Mr. Safely in buying; he was doing the buying for the Rock Island Co. I had the exclusive handling of it, when it was known that property in this vicinity was wanted for railway purposes the prices increased. I don't know that they doubled. The sales in that vicinity have been largely limited to the Illinois Central and Rock Island Railways and the lots sold to them were full lots, not lying along the river.

A. F. Groltz.

The defendant then produced the above witness, who being sworn, testified on direct examination as follows:

I live in Cedar Rapids; have lived here 24 years; have been in real estate business exclusively for 15 years in Cedar Rapids and during that time have been buying and selling real estate more or less in Cedar Rapids, and made a special study of real estate values about the city in all parts, have also handled considerable wild lands.

I am acquainted with location of the gas works on Lots 1, 2, 3, 4 and 5, in Fractional Block 9, and Lots 1 and 2, in Block 10, and have examined the lots. Assuming the lots to be 60 x 121, I would suppose the lots without improvements were worth $30.00 a front foot or $1,800 each at the present time. There was some
464 increase in value on account of the railways but I think that has been exploded now. In the last two or three years there has been no special demand for property in that immediate vicinity other than for railroads; manufacturing has not drifted in that direction, and no new buildings outside of the sash and door business. When I speak of the property bought for special purpose, I mean the man wanted to reach the river or something of that kind and he might on that account pay more than the property is worth. They generally pay the top price when buying property for special purpose. I have had a good deal of experience along that line.

Cross-examination:

Some lots were bought recently almost across the street from the Gas works by the lumber company for $2,500 a lot. I got my information from one of the owners. They cover the entire block running from Ninth avenue to the Gas company, three lots in all. The character of the lots in that vicinity is especially adopted to some special purposes, particularly for tracks and large freight houses, but I doubt whether wholesale houses will go down in that vicinity. Of course, it has a special value for certain purposes like any other property. The value I have given is on vacant lots, without reference to any special purpose. It is a generally good location, well supplied with trackage and all that. I know how the Milwaukee Railway is crowded in there. That is a railroad section down there; very much so. You would not be surprised if the railway would pay $4,000 or $5,000 a lot for them; they will do it when they have to and it is very often done. My valuation is based on the ordinary market value.

465 *H. S. Keffer.*

The defendant then recalled the above witness who testified on direct examination as follows:

In addition to being City Recorder, I am Clerk of the Superior Court, and have in my possession all records of the Superior Court, which I have examined to ascertain what judgments have ever been

rendered against the plaintiff and find that no judgments have been entered against it. I found record of suits commenced against it; there was five of these suits in all but no judgment. Exhibit "E-2" is the Revised Ordinances of the City of Cedar Rapids of 1898. (Defendant now offers in evidence so much of Exhibit "E-2" as is found in Chapter 43, which was received without objection.)

CHAPTER 43 OF EXHIBIT "E-2."

"Whenever any highway, street, avenue or alley has been ordered paved and property owners owning property abutting or lying along such street, have been notified by the city to connect their property with gas mains by laying pipes to curb line, it shall be unlawful for any person so notified who has refused to comply with such notice to enter such street after the same has been paved and make excavation in the paved portion for the purpose of connecting their property with such gas mains. (Passed August 7, 1896.)"

Exhibit "F-2" are revised ordinances of 1906, and Exhibit "G-2" is the original record. Defendant offers in evidence so much of Exhibit "F-2" and "G-2" as is found in Chapter 37, which is received without objection. These are the same as Exhibit "E-2" and need not be set out herein.

466 *T. R. Warriner.*

The defendant then produced the above witness, who being sworn, testified as follows on direct examination:

I am City Engineer of Cedar Rapids; have been for two years; I was graduated from Department of Engineering, Cornell University, in 1893, and have been engaged in civil engineering since that time, mostly bridge and municipal engineering. I have been actively engaged in the profession all the time.

I have had experience in surveying for the river front commission to ascertain the meander line of the Cedar River. I commenced work on that two years ago and worked part of two seasons. I have a plat showing the meander line of the river at Fractional Blocks 9 and 10. In making my survey I found the original monuments at the south end of the line in Sec. 28, and references for the original monuments at the north end of the line, which were references had to the original monuments were first in position and I found the notes of the government surveyor, that established the meander and these monuments. Exhibit "O" is a plat showing government meander line through Fractional Blocks 9 and 10. The meander line crosses the northerly line of Eighth avenue 56.3 feet westerly from the west line of First street, and the southerly line of Seventh avenue 19.5 feet west from First street, and southerly line of Eighth avenue 36.6 feet, the line marked "Government Meander Line" is correctly shown on Exhibit "O."

To ascertain the meander line I re-located the meander post on the Section line 21 and 28, which stands easterly from Fourteenth

avenue, and ran the line out, and followed the instructions
467 laid down by the government land office for this kind of work and in following those got the figures from which the map and measurements are made. After I had located these corners and checked back my work, there was no difficulty in locating the meander line as the correct meander line. We prepared the plat Exhibit "O," December 2nd, and our computations are the result of work gone through for the last four years and the plat was drawn in accordance with these measurements and computations taken during that period in the actual survey. The words "Government Meander Line" are printed immediately over the line in question. (Defendant offers in evidence Exhibit "O," which is objected to as incompetent, irrelevant and immaterial, taken subject to objection.)

The rip-rap wall and the stone wall on Exhibit "O" are made out in the river on made ground, the water comes right against the stone wall at the present time, but the original water's edge or bank was considerably east of the present wall and the water's edge was originally considerably east of the present stone wall. The plat "O" shows all that the plat "51" shows with reference to this gas property and the meander line. Taking the government notes and the information I had I am satisfied my meander posts are correct and as a surveyor I would say that the two meander posts I have located are correct. In assuming the points were correct, I took the government notes and applied to proofs of them. The meander post in First avenue was re-located from the evidence of a witness given at the time the paving was laid when the marker had to be obliterated there, and the plat shows the distance from First street and First avenue. The meander post on the east line of 28 was located from the east quarter corner where the westerly line of
Second street intersects Fourteenth avenue, which is given
468 in the records. The easterly quarter corner of 28 was a stone located between Third and Fourth street and Twelfth avenue and we checked that stone.

Exhibit "J-2" is a certified copy of the government notes of the meander line of the river through Cedar Rapids and are the government notes testified to by me yesterday. (Defendants offer in evidence Exhibit "J-2" being a certified copy of government notes relative to the meander line of Cedar River at the point in question which is objected to as incompetent and immaterial, taken subject to objection. (For Exhibit "J-2" see page — of this Abstract.)

Cross-examination:

The survey made by me was the result of the River Front Commission. The commission had the survey of very valuable land and buildings, between the meander line and the river, at First avenue and all the way down the meander line is 67 feet from the westerly line of First street. The Gazette building is located right upon First avenue and part of it is between the meander line and the river. The meander line is 150 feet in some places from the water's edge and there are many large business blocks between it and the river. I made the survey personally. The meander line

which I have located goes right through the plaintiff's buildings and the big holder. I don't know how long the Gas company has occupied this land. I have known its works were there for 20 years. I could not find the original corner in First avenue, for when the paving was put down the stake was replaced out on the street line and we relocated the point from those references and assumed that was correct, the distance from the point as I located it
469 checked up with the distance given in the government notes.

The distance given from the quarter section corner of Section 28. I did not find the original government stake. The government land office lays down directions for running meander lines. I located the quarter corner on the easterly line of Section 28, not the original government stake but I found a monument which replaced the original. I found no original government monument or bearing marks, but found a stone that was identified as the original government corner and as to whether this meander line that I have shown on Exhibit "O" is correct or not, depends upon the correct location of the two meander posts. The posts I have located are correct, assuming the point from which I measured to ascertain the location of these posts to be correct. I think the records do show where the government surveyors went, at the east quarter corner of Section 28, we found a stone about 16 inches square extending down into the ground two feet and a half, and a hole drilled in it and a piece of iron driven in the hole. I think that stone replaced the original stake and my basis of location of the meander posts is to assume that these points were correct, and in assuming that they were correct points I took the government notes I had and applied the proofs to it. The First avenue meander post confirms the record and is on the north side of First avenue and the westerly line of First avenue and the westerly line of First street.

George Laird.

The defendant then produced the above witness, who being first sworn, testified as follows on direct examination:

I am superintendent of the Quaker Oats Company, which
470 was known as the American Cereal Company prior to 1906.

I have with me a statement of the gas bills paid by the company to plaintiff, being months of consumption.

1906, November	c. f.	$167.10
1906, December	408,200 c. f.	267.49
1907, January	302,100 c. f.	287.00
1907, February	231,200 c. f.	231.20
1907, March	525,500 c. f.	472.95
1907, April	842,100 c. f.	757.89
1907, May	1,472,900 c. f.	1,325.61
1907, June	945,300 c. f.	850.77
1907, July	52,700 c. f.	52.70
1907, August	252,100 c. f.	252.10
1907, September	405,000 c. f.	384.75
1907, October	443,509 c. f.	421.33

For three months, April, May and June, we paid less than 95c per thousand, for five months we paid at the rate of 95c. The paper marked Exhibit "Z" is the contract between the company and plaintiff relative to the price of gas. (Defendant offers in evidence Exhibit "Z" which is received and is as follows:)

EXHIBIT "Z."

"JULY 17, 1905.

American Cereal Company, Cedar Rapids.

GENTLEMEN: On the proposal to use gas at your plant in the city to the amount of 50,000 cubic feet, if you will pay $150.00 for special service pipe to our nearest 4-inch main, we will furnish you gas at the net price of $1.00 or on the consumption of 50,000 cubic feet per month and will give you credit of one-half of your gas bill each month until the $150.00 you have advanced is paid. The present price of gas for domestic and cooking purposes is
471 $1.15 per thousand cubic feet. You will also find our gas very high in heat units.

CEDAR RAPIDS GAS LIGHT CO."

SECOND LETTER OF EXHIBIT "Z."

SEPTEMBER 28, 1905.

American Cereal Company:

Answering your request for proposition on consumption of 25,000 to 40,000 cubic feet of gas per day, we further extend our proposition of July 17, 1905, to a net cash price paid 95c per thousand cubic feet on consumption of 300,000 cubic feet per month. If your consumption will reach 500,000 cubic feet per month which is your last estimate, we will make you a net price of 90c per thousand cubic feet, but you will require a larger service pipe than the one specified in our July letter. We will put in whatever pipe is necessary for your consumption and charge you the cost price and allow you to use the same at no cost as above proposition.

CEDAR RAPIDS GAS LIGHT CO.

THIRD LETTER OF EXHIBIT "Z."

SEPTEMBER 29, 1905.

Glenn M. Averill, Secretary Cedar Rapids Gas Light Co.:

Referring to your letters of July 17th and September 28th, addressed to American Cereal Co., we accept your proposition
472 and request that you kindly get the necessary material for making connections and having the same installed, with all possible haste.

THE AMERICAN CEREAL CO.

Exhibit "Z" is the entire contract between the company and plaintiff for the furnishing of gas and was never reduced to any other form and we have been acting under it ever since. The plaintiff allowed on our bills of December, 1906, and January, 1907, credits of $194.85, being the cost of the special pipe installed and this allowance was in addition to our contract price.

Cross-examination:

The service pipe was to be paid for in cash, and the pipe was put in by our company and became the property of plaintiff and is plaintiff's property now. We were really paying for that much gas in advance. In consideration of our paying that much in advance the company was willing to put in the pipe. We put in our own apparatus and we paid for them, and we put in our ovens and large tank and the exhauster that ordinarily would not be used. The American Cereal Company's use of gas is between 400 and 600 times greater than what I use at my private residence and I use gas for both cooking and light.

F. W. Barta.

The defendant then produced the above witness, who being sworn testified as follows on direct examination.

I have lived in Cedar Rapids since 1882; am 44 years of age; am now sewer inspector of the City of Cedar Rapids. I have always lived about 7 blocks from the gas works. I remember the original bank of the river as it was about 18 or 20 years ago. There was nothing but river bank at Seventh avenue, west of the build-
473 ings or near those two tanks. That was nothing but a river bottom beyond the gas holders. The river bottom at Eighth avenue was 10 feet beyond the driveways west of the building on Eighth avenue, the one on the corner. It might have been 80 feet from First street. There were scales and a hog pen on Fr. Block 10. The hog pen might be 100 feet long, running with the river and perhaps 80 feet back from the street; part of the pen was on stilts. The ground between what was formerly the river bank and what is now marked rip-rap-ing has been filled in. The gas company dumped its cinders there. You find broken parts of furnaces and everything. Part of the holder on Lots 2 and 3, Block 9 stands in what used to be the river; it was extended into the river but there was a bank along there part way easterly of the westerly side of the holder.

Cross-examination:

I do not remember when the small holder was built, but it was before I came to Cedar Rapids. There wasn't any kind of trees or rubbish between the river and the holder. There used to be a set of wagon scales where the third holder now is and between the scales and First street was a little house, probably 10 feet wide. Then came the hog pen. Those lots have been filled in back of where the hog pen was. I never heard any one dispute the company's right to that land that they occupy.

Joseph Prochaska.

The defendant then produced the above witness, who being sworn testified as follows on direct examination.

474 I have lived in Cedar Rapids since 1867; I am a laborer; will be forty-nine years old in June next. I live on Tenth avenue and Fifth street; have lived there most all the time I have been in Cedar Rapids; all but three years. I am familiar with the premises known as Fractional Blocks 9 and 10, where the gas works now stands and have been for twenty-five years. When I first knew the property the river bank was back of those gas holders, west of the small gas holder; if I remember rightly, at Eight avenue and First street where they have the building known as the scrubber and condenser room, there was only about 10 feet back of that before it sloped down. That building was built somewhere near 18 or 20 years ago. I worked on the building carrying brick for the masons. I knew where Mr. Bradley had his hog yard, it was just across the avenue from the building I was working on. The river kind of turned off to the east there. The hog pens were constructed mostly on posts and went out over the river quite a ways. The hog pen would have come about to the center of the large holder now.

Cross-examination:

The river bends to the east a little below the big holder. That bend was always in the river but a little farther up. I remember when the second holder was built. They got it as close as they could to the river. They have been filling along the river from Seventh avenue to First avenue and buildings have been put along the banks of the river. The Sinclair building I guess has been built out where the river used to be and there has been filling going on by the owners of property all up and down the river and they have built on it all along at different places. It may have been 70 feet from the west side of the hog pen to First street, but I don't think it was over a hundred feet.

475 *John Leasure.*

The defendant then produced the above witness, who being sworn testified on direct examination as follows:

I am 50 years old; I live just outside the city limits; I am a contractor and builder; have been engaged in that work for 16 years, mostly in Cedar Rapids, and I devote all my time to that work. I have made an examination and measurements of the buildings and structures of plaintiff and an estimate on the buildings. The estimate would apply during the month of December, 1906. All of my estimates and valuations apply as to that time. Exhibit "B-2" is the estimate that I have made on the plant referred to. I estimated the replacement value of all those buildings was on December 31, 1906, $22,132.57.

The first building I have estimated is the shop, that is 47 x 59 feet by 18 feet high, composed of brick, part of the roof being galvanized iron, part tar paper. In arriving at the valuation I took the measurement of the walls and figured the amount of brick and I know what it cost to lay brick per thousand, then throwing the brick into squares at so much, and arrived at the cost in that way. I found there were 1888 feet of stone foundation. To start with we put in the excavation which amounted to $15.00. There is no cellar under this building; the 1888 feet of foundation amounts to $377.60. The brick walls 100,000 brick, $1,200, and the floors $194.32. Seven iron trusses 28 feet long, $175.00, and 6 iron plates 58 feet long, $25.00; galvanized iron roof 1888, $122.16; tar paper roofing, ten squares, $50.00; eighteen windows and 4 doors, $72.00; a total of $2,231.08.

These figures include all the items in the building including builder's profit. The next building is designated as coal
476 shed. That building is 77 x 44 and 27 feet *feet* high on one side and the other side runs down to 18 feet, the roof being supported by trusses made of timbers 2 x 8 or 2 x 6, there are various sizes, and the roof is galvanized iron. The sides of the building are composed of 3-inch plank. There is no way of getting at exact depth of the concrete foundations and footings, and I figured the ordinary depth of footing to support the posts that carry the roof; it foots up to $100. I figured it 4 feet deep, which is sufficient to carry the building. The next item is 22 8-inch beams, they sustain the ends and support the roof, amount $375.00. There are 12 6 x 8 wooden posts, that support the side of the roof, $2,500; 8000 feet of 3-inch lumber for planking sides, $270.00; "I" beams, $378.00; 38½ squares corrugated iron, $275.00, and wooden braces, $100.00; 6930 feet of floor, $207.90. Total, $1355.00, which includes building complete, including builder's profit.

The next building is the retort house, the size is 80 x 36 feet, walls 17 inches thick, slate roof. The items are excavation, $200.00; stone and concrete foundation, 5880 feet, cost $1,176.00; brick, 190,000, $2,280; trusses, $375.00; roof, 57½ squares, $920.00; 16 windows and 6 doors, $132.00; 9 ventilators, $22.50. Total replacement value, $6,415.50. This makes the building complete. The boiler house is 22 x 27; that is a small corner building that puts up against the retort house. The items are shown on Exhibit "B-2" and the total which includes builder's profits is $430.70. The building containing the meter, and scrubber and condenser. This building is 84 feet by 31 feet, and is of brick. The items entering in this building are shown on Exhibit "B-2" and include all the items necessary to make this building complete and the total amount including builder's profit is $3,201.80.

477 The purifying house is a building 49 x 60 feet and is of brick construction. It is 23 feet high from top of foundation to the plate. The items that go to make the building complete as it stands are given by me in Exhibit "B-2." And the total going to make up the replacement value on December 31, 1906, is $5,256.66. This includes a profit to the builder.

The pump pit is of stone and brick and the value I have placed on it is $136.00. The coke shed is 32 x 48, 20 feet high and is supported by posts. The lumber is figured 3,100 feet, $95.00; roof, $184.00; 8 posts, 30 feet long as near as I could get at them, $48.00; and trusses, $50.00. The total, $377.00. I have figured a total of $1,618.00 for the stable and the roof over the scales at $55.00.

(Defendant offers in evidence Exhibit "B-2" which is objected to by plaintiff because witness has not shown himself competent to testify, taken subject to objection.)

EXHIBIT "B-2."

Inventory of Building of the Cedar Rapids Gas Light Company.

By J. W. Leasure, General Contractor.

1. Shop Building and Store Room. This building is 47 feet x 59 feet x 18 feet, and is of brick with wood floor; corrugated iron and tar paper roof.

Valuation.

Stone foundation, 1888 feet		$377.60
Excavation		15.00
Brick walls, 100 M brick		1,200.00
	Floor	194.32
478	7 iron trusses, 28 feet long	175.00
	6 iron bars, 58 feet	25.00
Galvanized iron roof, 18.88 sq.		122.16
Tar paper roof, 10 squares		50.00
Windows, 8; doors, 4		72.00
Total		$2,231.08

2. Coal Shed. This building is 77 feet x 45 feet x 27 feet. The roof is supported by 22 "I" beams, 27 feet long; the roof is corrugated iron, and the sides are planked with 3-inch plank.

Valuation.

Concrete foundation and footings	$100.00
22 8-inch iron beams 28 feet long	378.00
12 6 x 8 inch wooden posts, 16 ft.	25.00
3-inch lumber, 9,000 feet	270.00
Corrugated iron roof, 38½ sq.	275.00
Wooden trusses	100.00
Floor, wood, 6,930 feet	207.90
Total	$1,355.00

3. Retort House. This building is of brick with 17 inch walls; slate roof with ventilator. Under half of this building is a basement with about 8 feet head room, with iron floor.

Valuation.

Excavation	$200.00
Stone and concrete foundation, 5880 feet	1,176.00
Brick, 190 M	2,280.00
15 iron trusses, 36 feet long	375.00
479 Slate roof, 57½ squares	920.00
16 windows; 6 doors	132.00
Iron floor	1,312.00
9 ventilators	22.50
Total	$6,417.50

4. Boiler House. This building is 22 feet x 27 feet x 18 feet, and is of brick with gravel roof.

Valuation.

Stone foundation, 441 feet	$88.20
Brick, 20 M	240.00
Gravel roof, 7½ squares	90.00
Doors and windows	12.50
Total	$430.00

5. Building Containing Meter Room, Office Room, Scrubber and Condenser Room and Engine Room. This building is 84 feet x 31 feet x 18 feet; is of brick with shingle roof and wooden trusses. Under a part of it there is a basement with a cement concrete floor.

Valuation.

Plastering	$49.80
Cement floor	240.00
Excavation	48.00
Stone foundation, 3,640 feet	800.00
Brick, 125 M	1,500.00
Shingle roof, 38 squares	456.00
Windows, 12; doors, 6	108.00
Total	$3,201.80

480 6. Purifying Building. This building is 49 feet x 60 feet x 23 feet; is of brick with gravel roof; concrete floor in basement; wooden floor above; concrete foundation.

Valuation.

Concrete foundation	$1,726.56
Brick, 150 M	1,800.00
Gravel roof, 30 squares	360.00
36 6-inch iron columns, 9 ft. long	522.00
Windows, 28; doors, 6	200.00
Wooden trusses, 3	90.00
Cement floor, 2940 feet	235.20
Total	$5,256.56

7. Pump Pit. Is of brick and stone construction, 8 feet *feet* x 10 feet.

Valuation $136.00

8. Coke Shed. This building is 32 feet x 48 feet x 20 feet; is open on three sides and only boarded one-third of the way down from the top.

Valuation.

Lumber in side wall, 3100 feet	$95.00
Galvanized iron roof, 23 squares	184.00
8 posts, 30 feet long	48.00
Trusses, 32 feet	50.00
Total	$377.00

9 Stable. This building is 24 feet x 30 feet x 32 feet, with two stories and a basement, and is of brick with concrete floor and gravel roof.

481

Valuation.

Stone foundation, 1620 feet	$324.00
Brick, 67 M	804.00
Joists, 4300 feet	169.00
2-inch plank flooring, 1728 feet	85.00
⅞ inch plank flooring, 864 feet	42.00
Gravel roof, 8 squares	80.00
Windows, 16; doors, 3	114.00
Total	$1,618.00

10. Roof Over Scales.

Valuation $55.00

Total Valuation.

1. Shop building and store room	$2,231.08
2. Coal shed	1,355.00
3. Retort house	6,417.50
4. Boiler house	430.70
5. Building containing meter room, etc	3,201.80
6. Purifying building	5,256.56
7. Pump pit	136.00
8. Coke shed	377.00
9. Stable	1,618.00
10. Roof over scales	55.00
Incidentals	1,053.93
Total	$22,132.57

I hereby agree to build new buildings of the character, material and dimensions as above specified and as found at the works
482 of the Cedar Rapid Gas Light Company, in Cedar Rapids, Iowa, for the price above enumerated, and to build all of said buildings for $22,132.57.

J. W. LEASURE.

These valuations include everything that goes to make up the buildings complete and are the replacement values of all buildings, including a contractor's profit for building the same, and these valuations will extend during the entire month of December, 1906. I have included an item designated incidentals $1,053.93, in addition to the valuation given. These incidentals are intended to include various things. You take it in the construction of work and there are lots of things you can't always see and this amount would cover all the incidentals I can see that might be necessary to put in the building.

I have added to Exhibit "B-2" a certificate to the effect that I agree to replace or rebuild the buildings of the character of these for $22,132.57, and I would at this time agree to replace them with buildings like those for that amount and I would have replaced all the buildings on December 31, 1906, for the sum of money I have estimated in Exhibit "B-2." This would include new buildings of the same construction on these grounds.

Cross-examination:

I prepared the estimate, probably a week ago. I have put up a number of brick additions in Cedar Rapids; I built one or two for the Standard Oil Company. I built one addition onto the Craemer dry goods store, three stories high, located on First avenue, between Second and Third streets. It was an addition from the back end of the building to the alley. I built it three years ago and did it under contract. I also built an addition of brick and stone
483 to the Presbyterian Chapel. The Standard Oil building was a brick building, two stories high, at their plant, about

30 x 50 feet. I don't know that I have constructed any other brick buildings. I have done carpenter work and also contract work in the way of additions.

Q. Your work has been devoted to repairs so far as brick buildings are concerned?

A. In a measure; I haven't constructed any new brick buildings. I have built only one brick building that I call to mind just now, which was a stable or barn for the Oil company. I never constructed a cement building. I figured on the cement work at the gas works myself; I didn't go around town and get everybody to figure on the work. I met Mr. Darr and Mr. Smith the day I was at the gas works and we did some of the measuring together, but didn't talk about prices.

I didn't figure any cellar or basement expense in the shop building; I don't think there is any cellar. If there is a cellar then I would not be right. I figured a stone foundation six feet. The brick work comes down within about 10 inches of the ground. I allowed for a footing course of 18 inches. I didn't figure the sand or lime separately. I couldn't say whether I figured on lime for the mortar or cement; there would be a little difference in the cost, not very much. The difference would probably be 5c a cubic foot. Walls with lime mortar are worth 20c a square foot in the wall, and cement mortar is worth 25c, including the stone in place. In arriving at the brick in the walls I figured on 12-inch walls, 23 bricks to the square foot, and the openings are all figured in with the brick work. I figured on Cedar Rapids kiln run brick; kiln run means good, bad and indifferent. I didn't figure on Chicago brick.

484 Chicago brick laid down in Cedar Rapids cost about $6.00, and it cost about $12.00 a thousand for brick laid in the wall, including everything. I figured the kiln run brick to be worth $7.00 a thousand, and that I lay the brick in the wall at $5.00, and furnish mortar and everything. I took into consideration the building of staging; there is nothing extra figured for staging. I am not able to give any figures on the cost of staging for this building now. The meter room is figured in the shop building, taking it clear down to the coal shed; part of the floor is wood and part cement. I cannot tell how much cement floor I figured for this building. I figured the cement at 8c a foot and the floor at 5c a foot, using ⅞ inch flooring. I figured the doors and windows in the repair shop at $6.00 each, including casings and all hardware. The carpenter work is included in the other items entering into the building.

The coal shed is supported by 22 "I" beams, 27 feet long. The purpose of the "I" beams is to support the roof and hold the plant siding. I figured the foundation wall 12 inches thick straight down 4 or 5 feet into the ground. It is a continuous wall. I figured that the "I" beams would go into the concrete 2 feet. I would set the "I" beam flush with the inside of the foundation wall. I figured the 3-inch lumber at $30.00 a thousand. I think I can buy it and put it in place for that price. This price I figured would get the 3-inch stuff sawed and fitted in between the "I" beams. I couldn't tell what that labor would cost. It does not require a good quality of lumber.

I could not tell you now how much I figured a piece for the trusses and I haven't got the figures to show how much lumber there is in them but in making my estimate I figured the exact amount of lumber in them.

485 In the retort house estimate I figured a basement under only one half of the building. I figured in the iron floor in the retort house at 80c a square foot and figured on plate iron. I did not measure the thickness of it. I figured 7-inch "I" beams under the floor for the full length of the floor, 82 feet I think. There are cross girders underneath, if I remember right and they are all figured into the floor, at 80c a square foot. The iron plates could be put in for about 66c a foot and the balance is for the "I" beams and supports. I figured the lumber for the door casings and that class of lumber at $38.00 per thousand, which includes the work of putting it in place and all the dimension lumber I figured at $30.00, including putting it in place and all the brick work I figured at $12.00 in the wall, and 23 bricks to the foot; stone work I figured at 20c a foot in the wall.

Redirect examination:

My figures and estimate include all brick partition walls and all other walls in the building that I found. My estimates include all trusses found in any of the buildings. Where staging is necessary for building brick walls I do not build staging proper but use horses.

I measured the cement flooring, also the wood flooring in the shop room and my estimate is made upon the basis of those measurements estimating each kind of floor separately.

S. H. Kooser.

The defendant then produced the above witness, who being sworn testified as follows on direct examination.

I have lived in Cedar Rapids forty years. I used to haul stock for Mr. Bradley from opposite the gas works. The hog pens were on the front Lots 1 and 2, Fractional Block 10. The river bank
486 was right back of those hog pens. I would judge the water when low was 100 to 125 feet from First street. The hog pens were put on timber or posts at west side and during ordinary high water the water came up under the stock yards and about 70 or 75 feet from the westerly line of First street. I know the location of Lots 3, 4 and 5, in Fractional Block 10. They were 8 or 10 feet lower than the gas company's lots and the river took a course a little toward First street there. I know the location of the building of the Gas Company that was on the corner of First street and Eighth avenue. The river bank or water's edge was about 40 feet west from that building but I never measured it and can't tell exactly. I worked for Mr. Bradley in 1889. I would think it was not over 70 feet at Eighth avenue from First street to the river's bank; the hog pens extended back about 80 feet from First street and about 20 feet

of them was on piling or posts and it would be about 60 feet from where the piling commenced to First street.

Cross-examination:

The building on Eight- Avenue that I speak of is the gas building on First Street and Eight- Avenue and the bank of the River was about 40 feet off from the west end of that building. I couldn't say exactly.

The office and scales were at the Southeast end of the yards. There were also sheds on the lots where the hog pens were, which were used to tie teams in, they were located South and along the line of First Street and the whole hog yard business was carried on on those lots down there to the south east of the gas buildings.

G. F. Allison.

The above witness being sworn testified on direct examination as follows:

487 I live in Cedar Rapids am assistant in the City Engineer's Office, have been employed in that capacity four years. Exhibit "34" correctly gives the lines of the streets and alleys of the city of Cedar Rapids and the parallel lines between the Avenues correctly represents the alleys. In a general way the alleys of Cedar Rapids parallel the streets. I have made a schedule of the streets and avenues in Cedar Rapids now occupied by gas mains that are paralleled by alleys not paved. I find 78,350 feet of alleys that parallel streets that are paved with brick or asphalt in which the gas company has laid its mains. I got this list of streets and avenues in which the Gas Company has mains from an Exhibit attached to plaintiff's amendment to its petition, filed February 21st, 1907. In making my calculation if I find a block where there is no alley between two streets in which there are gas mains I have shown it on my Exhibit. I found 17,172 lineal feet of streets where there was no alley on either side of the street and 19,586 lineal feet, where there was an alley on one side of the street, and 41,592, where there were alleys on both sides of the streets. I also found 7,260 feet of alleys that were paved and traversed by the Gas mains. I have never been in the Gas business or been engaged in laying pipe of any kind and don't know anything about the best plan of doing that work. In making improvements of all the streets in Cedar Rapids, there is a parking between the curb line of the street- that are paved and the sidewalk proper, this parking is not paved it is only sodded.

Cross-examination:

488 I included in my estimate all the paved streets. Second street is paved from "B" Avenue to Fourteenth Avenue. First Street is paved from "B" Avenue to Fifth Avenue and in estimating the number of feet paralleled by alleys I took the length of the Street from "B" Avenue to Fifth Avenue. In order to lay service pipes to Fr. Blocks 3, 4 and 5 you would have to cross the

street and have to connect it from the alley to one of the Avenues. Where ever I found an alley on one side of a street that has gas mains I included that street in my statement of the number of feet of strets paralleled by alleys I found 41,592 lineal feet of streets where there were alleys on both sides of the streets. I couldn't say how many of those alleys were paved. I did not ascertain that but a good many of them are paved. It will cost just as much to dig up the brick from alleys down town as it will from the streets. The number of feet of paved alleys that parallel this paved streets that have gas mains is 7,260.

It is conceded that Exhibit "C-2" is the original notice of appeal of plaintiff from the county assessment of 1907, and Exhibit "D-2" is the original notice of appeal of plaintiff from the assessment of plaintiff for city purposes for the year 1907, and that the said appeals are now pending in the district court of Linn county and were filed therein on the 30th day of August, 1907. (The defendant offers in evidence Exhibits "C-2" and "D-2" which are objected to as immaterial and irrelevant, taken subject to objection.)

EXHIBIT "C-2."

To Chairman Board of Equalization: The Cedar Rapids Gas Light Company, does hereby appeal from the "County Assessment" and valuation placed upon its property Lots 1, 2, 3, 4, and 5 in
489 Fr. Blk. 9, Lots 1 and 2, in Fr. Block 10 and Lots 1 to 5 in Block 9 and all appurtenances thereinto belonging and does especially appeal from any assessment and valuation for general taxation placed upon said property in excess of $108,000.00 which assessment was placed by the assessor at $175,000 and was raised by the said local board of review to $250,000. Said appeal is taken to the September term of the District Court beginning September 16th 1907.

CEDAR RAPIDS GAS LIGHT COMPANY,
By JOHN N. HUGHES, *Its Attorney.*

EXHIBIT "D-2."

(This Exhibit is in words and figures the same as Exhibit "C-2" except the words "City Assessment" is used where "County Assessment" is used in "C-2.")

W. E. Holmes.

The above witness being sworn, testified as follows on direct examination:

I live in Cedar Rapids and am City Editor of the Evening Gazette. I have lived in Cedar Rapids thirteen years. As City Editor of the Gazette my duties require me to investigate whatever things are of

public interest and to get the impression of the people in the city. I constantly interview people residing in the city with reference to matters of interest to our readers I have some slight knowledge with reference to the character of the service furnished by the plaintiff and the prices charged, from my own personal experience and from a large number of complaints that have been made to me as a representative of the Gazette during a period of several years and by a large
490 number of consumers. Our own experience is and was particularly unpleasant for a considerable time we were unable to get sufficient pressure or even boil water without running the stove 30 or 40 minutes, and in numerous occasions we were obliged to start a fire in the range to finish meals and have lamps on the dining table in the evening because of insufficient gas. The trouble, since something has been done to the mains of the west side, has ceased to some extent, but not entirely, particularly the gas stove and we have been several times lately obliged to finish meals on the range. About the same condition existed when the 90c rate ordinance was passed as does now. The worst trouble we had was before that, in the previous summer and before. So far as I know the extent of this condition is not nearly so general just now as it was a few months ago, when it seemed to be very general on the west side and also quite general on the east side. I didn't go to the Gas Company and make complaints simply because I did not think it would do any good. Because I never had had any satisfaction on any other complaint I had made to the Gas Company, I had complained previously and the treatment accorded me on those complaints was not very courteous to say the least. In the extreme cold weather last winter my service was spasmodic, it was quite poor at times, especially in the winter and at such times I found my gas bills were just as high as when my service was good and if anything a little higher.

Cross-examination:

My own personal experience with this trouble with the Gas began about 4 years ago. I live on "B" avenue West, we couldn't get gas enough to do the cooking and what we did get a large amount
491 was red instead of blue gas. The pressure main was put in a year ago last summer. It was after this time that the service at my home was better. I have had the gas stove that we are using about five years, have had it cleaned several times. I think it has movable burners. I have never requested the gas company or any of its officers to go over there and make an investigation and inspection of my stove to help get better results.

Q. You had your gas meter taken out once for nonpayment of your bill didn't you.

A. I think the gas company had the gall to take my meter out once when I was in the Black Hills. I know that it was arranged at the Gazette office to have the bill paid, but I presume it wasn't paid. I notified plaintiff that I had gone to the Black Hills. I notified Glenn Averill. He knew I was gone a majority of the time. I think they had notice before I went that I was going away, and I want to say that previous to that time, my gas bills had been sent

to the Gazette office instead of to my house and I had several times requested that it be sent to the house. But that particular time I was not in the city and it wasn't paid on the 10th and they took out the meter.

Redirect examination (witness recalled):

On Saturday I testified that my gas was turned off. I wish to correct that statement, to the best of my knowledge at no time has the gas in my house been shut off by the company, at one time while I was absent from the city notice was sent that it would be shut off if it wasn't paid by a certain time. I was confused in my statement from the fact that the landlord had the water shut
492 off at one time. I had a dispute or disagreement however with the Gas company about this notice to shut off the gas, some discussion with Glenn Averill, and it was in that connection that I spoke on Saturday of my relations with the officers of the company.

N. R. Parvin, a witness called by defendant, being sworn, testified as follows on direct examination:

I live at 805 First avenue in the annex to the Masonic library. I am 54 years old. Have been in Cedar Rapids since 1884, my position is that of Grand Secretary of the Masons of Iowa, and have charge of the Masonic library and Annex. I have had full charge of the buildings since 1901. We use gas in both the Masonic buildings, but only to a limited extent in the library.

My experience with the gas service is that we haven't been lighting up the main building but little and when we have attempted to light it up we have had a great deal of trouble to light it at all. On one or two occasions we found it a total failure, and on one occasion when we had visitors we had to bring in the oil lamps in order to see at all. That was a year ago in December. We have a gas stove in each building in the annex, we have had no trouble in the last three months but prior to that we had a good deal of trouble. I looked at it and found there wasn't pressure enough to do the cooking or washing or for the household work. There has been times when it was very poor and then again very fair—it has given us trouble for 2 years off and on. I have also been in my daughter's home, at Fourth avenue and Fourteenth street about a mile from the Masonic library, waiting for dinner, on two occasions in the
493 last four months when we could hardly get enough pressure to cook the meal. One time I was waiting an hour and a half when the meal should have been cooked in 20 minutes, simply because we couldn't get sufficient gas. I couldn't see that our gas bills varied at these times.

Cross-examination:

The time we had the trouble at the library was when we had occasion to use considerable gas a year ago in December along about the 25th or 27th. It was not very cold weather. We have had the

same trouble time and again and then some nights we would have better lights and we had the same trouble in the annex that we had in the library. For the last three or four months it seems to be acting nicely there is no complaint of it. I had the city man test our meter to see how it was. I have thought sometimes our bills were higher when we had poor gas than when good, probably noticed it more. I never made any personal complaint to the gas company. I have had the plaintiff come up at various times and blow out our pipes and use as they said alcohol to clean out the naph-alene, after cleaning it would go better for a time. The light is 100 per cent better today than it was 60 days ago.

E. M. Svoboda.

The defendant then produced the above named witness who being sworn testified on direct examination as follows:

I am in the coal, coke and wood business have been in that business for myself for seven years, and prior thereto I was working for others in the same line of business. The demand for coke
494 has been increased on account of the high price of anthracite coal in the past few years. Last year my sales of coke amounted to about 1,500 tons. In my opinion there are 5 or 6 thousand tons of coke sold annually in Cedar Rapids outside that made by plaintiff. The retail price of coke during Dec. 1906 was $6.50 today dealers sell it at $7.00 per ton.

(Defendant offers in evidence Exhibit "H-2" being an original deed to plaintiff which is received without objection and is as follows.)

EXHIBIT "H-2."

In consideration of $1,300 we, Mary A. Ely and John F. Ely, convey unto the Cedar Rapids Gas Light Company Lot 5 and South half of Lot 4, Fractional Block 9, Original Cedar Rapids, (with usual warranties). Executed May 24th, 1883.

(Duly signed and acknowledged.)

(Defendant offers in evidence Exhibit "I-2" which is received without objection and is as follows.)

EXHIBIT "I-2."

"In consideration of $1,500, Benj Foltz and wife conveyed to Cedar Rapids Gas Light Company Lot 3, and Westerly half of Lot 4, Fr. Block 9, Cedar Rapids. Executed Mch. 29th, 1883. (Usual warranties, duly signed and acknowledged.)

J. D. Kennedy.

The plaintiff then produced the above witness who being sworn testified on direct examination as follows:

I live in Cedar Rapids, am street commissioner, have occupied that position 3½ years. I know the location of the premises of
495 the Cedar Rapids Gas Light Company. The Gas Company has fenced up Eighth avenue along the westerly side of First street and put up a notice on the gate that reads "Positively no admittance."

Q. Do you know anything about the filling in of the rear of these buildings in fractional Blocks 9 and 10?

A. Why a little South of Eighth avenue and Eighth avenue west of First street. It is filled back of the buildings between Seventh and Eighth avenues principally with cinders. There is some filling back of the big holder. I have had a general idea of this property for 29 years. There has been some filling all along there.

J. C. Gillespie.

The above witness being sworn testified as follows:

I reside in Chicago, have resided there three months, prior to coming to Chicago. I lived in Dublin, Ireland. I resided in Dublin all my life 27 years. I took a course in accounts in Ireland. I took the usual Chartered Accountants' course. I joined the firm of Stakes Bros. & Tim, which are a large accounting firm there and went in the department of the water company for 5 years. I then took my experimental examinations and joined the firm of Stakes Bros. & Tim. I think about 9½ years ago. I was with them about 1½ years before going under articles and I was 5 years under articles with the junior member of the firm. They are chartered accountants,—the same degree as certified public accountants in the United States. I became associated with Marwick, Mitchell and Co., in Sept. 1907 in the Chicago office. I had met Mr. Marwick at Toronto prior to going with the firm.

I was requested by the firm, by Mr. Hall to come to Cedar
496 Rapids to assist in the examination of the books of the plaintiff. I came in charge of the auditing of the books. I think I remained here four weeks in the examination of the books, and made a complete examination and prepared the original papers and documents upon which the report was made out. I was responsible for the audit and made the examination myself. The package of papers and figures which is now shown me contain the original figures and memoranda that was made on my examination of the books. I think I had a talk with Glen Averill in regard to the entry in the book called the Yearly Record of the Gas Sold and called his attention to some interlineations and changes of figures which I found in that book and the difference between the daily and monthly reading of the meter. I understand that any change that occurred in those figures was in the adjustment on account of

the meter adjustment on account of temperature. The book I refer to is the yearly record.

Q. When you first called for this book was there a refusal to give it to you.

A. Well what I wanted to get at was the actual sales of gas to consumers—there was no way out of the books that I had for two weeks of telling that,—we went to the ledger with authority to check the consumers' accounts and we found several of those accounts out which would not give us a complete record—we were informed that many were gone and I asked for this book and many other papers and this book was brought out and the moment that was done I had a complete record. I was not shown any transfer binder or transfer ledger while there I never saw any book of the transfer binder title, we asked for it, or for all the books in connection with the consumers' accounts.

497 Q. Was there anything in your examination of the consumers' ledger that indicated to you there might be another book.

A. The only thing was that certain leaves had been put back of certain accounts. We understood when we started with this work that every leaf was destroyed when a man left the place or ceased to use gas, and we found that it did not show that condition and we inquired if they had a transfer ledger and what they did with their old accounts and they said they were not kept. Under the head of "General Repairs Account" I wanted to find how to divide that account whether to give it to manufacturing or to distribution or how to distribute it and I wanted to find out what their repair men were doing and during the conversation with Glenn Averill from time to time I understand that these men were not doing proper repair work on machinery or such as that but that these men went out and did general repairing about the place. With reference to the rip rapping as far as I remember, I said to him what were those men doing, any ordinary repairing work like machinery, and he told me that it was general work with reference to repair work on the boundry wall and river wall. That was of those I was trying to find out what they did.

Cross-examination:

PLAINTIFF'S COUNSEL: I have not seen the account that you are going to introduce yet.

DEFENDANTS' COUNSEL: You won't see it until we put Mr. Hall on the stand.

PLAINTIFF- COUNSEL: Then we will reserve the cross-examination of this witness until Mr. Hall goes on.

498 *James Hall.*

The defendant then produced the above named witness who being sworn testified on direct examination as follows:

My name is James Hall I reside in Chicago. I am a chartered accountant and a member of the firm of Marwick, Mitchell & Co.

I have been a chartered accountant for seven years, and qualified 14 or 15 years in the business. The qualifications of a public accountant depends on the country in which you live. In America there are no qualifications while in Scotland you must be a member of one of the recognized institutes. I am a member of the recognized institutes. I am a member of the institute of accountants and actuaries. My first work as an apprentis in learning this occupation was carrying messages and doing junior work in the office. I commenced in 1893. I commenced on the accounting work on the books and in a few months was a junior in the office as a junior I assisted other accountants, afterwards as I got the knowledge I took any small work on hand and gradually took the more important work. I had to pass an examination before I could get into the institution, before I could take out articles. I had to take an examination in bookkeeping and accounts and then in law and had to pass a final examination. I was five years under articles and two years as audit clerk before I became a member of the society. The society of accountants and actuaries in Glasgow has rules and regulations with reference to examinations, and I passed the examination that is provided for under the rules and was admitted as a member after taking the examination and paid the necessary fees. I was admitted in 1902.

I assisted in the examination of one gas company when I was
499 an apprentice. I came to this country in 1905 and became identified with Marwick, Mitchell & Co., at once and was made a member of the firm in February 1907.

Since I have been identified with the firm I have examined the books of six gas companies that I now recall. In examining books of this kind it is a part of the duty of a public accountant to know and determine what entries are false and what should be excluded.

I have examined the books of the Cedar Rapids Gas Light Company. I think I put in five days of about twelve hours each, excluding the necessary work done in Chicago. This was in addition to the examination I made while the books have been in the court room. I instructed Mr. Gillespie to take charge of the examination of the books and make copies of the entries contained therein. I received these working papers from Mr. Gillespie.

Exhibit "K-2" is a report of the books and accounts of the Cedar Rapids Gas Light Company prepared by me in the beginning of November. In preparing it, I had a copy of the interrogatories submitted to plaintiff by defendant and the answers submitted to those interrogatories.

I made an examination of plaintiff's books to ascertain the cost of manufacturing gas for the years 1902 to 1906 inclusive. The books showed the cost of manufacturing gas for the year 1902 was 35.19c; for 1903 38.33c; for 1904 42.53c; for 1905 38.68c; for 1906 41.11c or an average for the five years of 39.53c. These figures mean the cost of the gas at the holder including depreciation and includes all of the items that go into the manufacture for those years by plaintiff. I ascertained from the books the actual cost of dis-
500 tributing gas, including leakage which was for 1902 21.81c; for 1903 21.02c; for 1904 24.22c; for 1905 28.77c; 1906

27.01c and the average for the five years was 24.51c. This makes the total cost of manufacturing and distributing gas including leakage for 1902 —.57c; 1903 59.35c; 1904 63.75c; 1905 67.45c; 1906 68.12c; the average for five years being 64.05c; this includes all charges and depreciation.

The item of depreciation is not taken from the books but I excluded the depreciation as shown on the books and substituted a depreciation of my own. For the year 1902 the profits of the company making allowance for depreciation was $32,121.87; the dividends paid amounted to $12,000 the depreciation written off $10,000; the surplus $10,121.87. For the year 1903 the profits amounted to $36,962.14; the dividends $12,000 the depreciation $20,000; the surplus $4,962.14. *To* year 1904 the profits amounted to $38,171.64; dividends were $12,000; depreciation $12,500; surplus $13,671.64. For the year 1905 the profits were $35,437.49; dividends were $12,000; depreciation $10,000 and surplus $13,437.49. For the year 1906 the profits were $31,610.64; the dividends were $12,000; depreciation $13,000; surplus $6,610.64. For the year 1902 the surplus was 6.75 per cent and the capital stock of the company, for 1903 3.31 per cent; for 1904 9.11 per cent; for 1905 8.96 per cent and for 1906 4.14 per cent.

The above profits before writing off depreciation amounted for the five years to $174,303.78; the dividends to $60,000 depreciation written off $65,500 and surplus after paying dividends and writing off depreciation $48,803.28 and total return upon capital stock 32.45 per cent.

501 The books show that $25,974.60 was spent in 1906 for the Marion plant, which item includes the high pressure main from the works to the city limits. In the years 1905 and 1906 the company sent out more gas, according to the books than stated by Mr. Averill in his answer to the interrogatories, in the year 1905 2,130,140 in 1906 4,508,660.

The figures in my schedule on page five of my report were taken from the daily record book. I examined the book personally to see if the operation of the water gas apparatus and the coal gas apparatus were kept separate and they did not appear to be so kept. I could not arrive at what the cost of coal gas and water gas separately was, from the books. There are two accounts kept as to quantities one for coal gas and the other for water gas. The items of labor in the manufacture of water gas are kept distinct from the items of labor in the manufacture of coal gas. Mr. Averill's answer to the interrogatories shows leakage or unaccounted for gas to be 10.3 per cent of manufactured while the record showed 12.34 per cent. I examined the books to ascertain the amount of gas sent out each year for five years including amount sent to Marion and this is shown in my report. The books did not show the gas used at the works for the years 1902 and 1903.

The original contracts with J. R. Meader and the Eclipse Stove Company were not submitted to me, but I made inquiry in regard to them of Glenn M. Averill and was informed that he had none, but I was informed that they were to receive approximately 75 per cent

of the ordinary selling price of gas. There is no record in the books for receipts for the sale of gas in Marion but I got the figures of the amount of gas sent to Marion from the daily record book
502 and also from monthly and yearly record. I made a th-rough examination of the books to try to find the item of $5,627.00 explained by me in K-2 but there was no record of it. I have since this case has been in progress been shown the books of the company containing a lead pencil memorandum on one of the pages with reference to this item of $56.27, but that pencil memorandum was not in the books when I examined them. The books show that the setting of meters is charged to fittings account.

From the books of the company I ascertained the details of the cost of gas from 1902 to 1906 including the depreciation of the plant general repairs and fittings account. When it came to the item of depreciation I eliminated it and substituted charges of my own. The items of depreciation were arbitrary ones and by including them in the account a fair basis could not be determined for getting the cost of gas in Cedar Rapids. They had not been computed on any scientific basis an examination of the relation that the depreciation bore to the total capitalization revealed that fact.

It is a part of a public accountant's profession and business to know what the depreciation is on a plat of this kind. I have had the matter under consideration several times; during the last two years I have given quite a deal of study to it and I know what the depreciation should and naturally would be on such a plant as plaintiff's. I eliminated the charges on the company's books for depreciation and inserted in the place thereof a charge of 5c per m. c. f. of gas manufactured and that amount will cover the depreciation of this gas works, and in arriving at this figure I took into consideration the amount paid out by this company in repairs, and renewals
503 charged to fittings account. If the repairs were high the depreciation would be correspondingly low and if repairs are low depreciation must be increased. The figures which I insert for depreciation in place of those shown by the books were 1902 $2,708.47; 1903 $3,259.55; 1904 $3,666.48; 1905 $4,431.71; 1906 $5,330.82.

With reference to how long it would take to accumulate a fund equal to the value of the plant, exclusive of real estate, basing it on the statement of 1906 $5,330.82. I am assuming plaintiff's inventory—1.07 per cent, set aside in a savings bank at 4 per cent would accumulate to the value of the plant in 30 years and at the same time the plant would have a scrap value—that is the breaking up value. The amount the company would have on hand at 30 years would be about $350,000. The words station cost used in my schedule means cost in the holder. I find from the repair account that the company paid out for general repairs in 1902 $1,915.27; 1903 $1,460.91; 1904 $1,437.49; 1905 $1,940.90; 1906 $3,258.38. This consisted of ordinary repairs to the plant, as I understand, the stoves and repairs to mains and services and general sundry repairs. Where a piece of pipe or main had been taken out—had given out, and a new piece was inserted it was charged to this repair account

and I found none of it charged to construction account. The company made a profit of its fitting account from the year 1902 of $283.99; in 1903 there was a loss of $972.80; 1904 loss of $39.60; 1905 loss of $6,758.98; 1906 loss of $5,943.87. This account includes the cost of making connections from the plant to the consumer also from the mains to the consumers' houses, setting meters, stoves and arc lamps.

The items for repairs done at the works are quoted under cost of manufacture at the retort house. In fixing my estimate of
504 depreciation I took into account the money that had been expended in repairs and renewals and charged to manufacture on the books. Excluding the charge on retort house the total repairs that I could distinguish as shown by the books was 1902 $1,631.28; 1903 $2,433.71; 1904 $1,477.09; 1905 $8,699.88; 1906 $9,202.21.

I got the items that I have given for taxes from the books and tax receipts I excluded annex tax and rent. Under the head of officers' salaries, office expense,—is included the salaries of Messrs. Averill and the expense of running the up town office.

There did not appear to me to be any relation between the annex and the gas plant, the annex has some wooden houses that were being rented, it had never been used for manufacturing purposes. Mr. A. T. Averill received $1,800 per annum as a salary in 1906 and Mr. Glenn Averill $2,400. I do not know how many persons were employed by the company at the several dates for which the salaries are tabulated in "Exhibit A" of my audit. In 1906 Vice President received a salary of $50.00 a year, cashier and bookkeeper $80.00 a month, stenographer $75.00. I do not think I can distinguish the salaries farther. Aside from the officers' salaries and paying the meter boys I would say that the reasonable cost to run the office would be $150.00. A stenographer and journal bookkeeper at $60.00 and two meter boys who would work one week each month at $10.00 a week. I have treated the matter as though one-half of the manager's time should be devoted to the office. A nominal salary would be all that would be required to pay the president to conduct this business in a reasonable way, say $200 a year. In making my tabulation on page 13 of my report (Ab.—) I have included the full salary of the president, half the salary of the manager and secretary and the total expense of running the
505 office as I found it in the books of the company including all items. In my opinion ample compensation for a man who is qualified for superintendent and manager would be $2,000 a year. I have computed the total distributing expense from the books for 1902 $9,767; 1903 $10,140.17; 1904 $10,339.34; 1905 $17,592.15; 1906 $19,045.77 which includes all the items under the heads "General Repairs and Fittings, Account Taxes, Salaries, Office Expenses." In determining this statement I have eliminated from the books interest on floating debt and bonded debt, because not a charge against consumers in arriving at cost of gas. In giving the total cost on page 13 of my report (Abs. —). I have excluded interest and the arbitrary amount set down by the company for de-

preciation and have included 5c. per m. c. f. for depreciation. I have also eliminated taxes on annex and expense of new benches in the year 1906 of $1,862.76, one of these benches was installed in December 1906 and the remainder in 1907 and had not been fired up when I was down to the works which was since this trial begun. In a plant of this size it is not a fair charge to in one year charge up a set of three benches of nines or to charge for refilling of the benches it should be distributed over a series of years and determined by the life of the benches. I know from my experience in examining gas companies' books that the life of a bench of 9's is three years. This charge on the books was made for the refilling of three benches, the actual cost not the labor. I excluded the labor in refilling these benches from the operating account—It ought to be charged against the fund to be provided out of each year's operations known as depreciation fund or a special fund set aside for refilling benches. It should not all have been charged to this fund prior to Jan. 1907 when it was not installed prior to that
506 date. I excluded it because the refilling of benches is a matter that only occurs once in 2½ or three years and the charge for refilling ought to be distributed over that period. In 1905 three benches of 6's in this plant were refilled although I cannot trace the items from the books and refilling was done in 1902 and 1903. Only a small portion of the materials purchased by the $1,862.76 item excluded by me had been used prior to Dec. 31, 1906. The day I opened the books of the works I would open an account for the refilling of the benches and that charge when the benches were refilled would meet the expense I found when I visited the works; only one bench of nines in use, or about 20 per cent of the gas apparatus. I would enter the item of $1,862.76 before mentioned subsequent to Dec. 31, 1906, because the goods were not used until after that date, and I would take into account what had been done during the five years prior in regard to refilling the other retorts in apportioning the expense.

On page 14 of my report (Ab.—) I have made a computation from the books of the company to ascertain the cost of gas per m. c. f. from 1902 to 1906 and in making this computation I have excluded from the books of the company the adjustment for temperature. This was simply some figures on the Daily Record book marked—adjustment for temperature—I don't know what it is. I have excluded nothing else. From the daily record I found there was gas in the holder on January 1, 1902 to the amount of 71920 c. f. and I get the "total gas made each year" from the yearly record except for 1905 and 1906 which I got from the daily record. The years 1902, 1903 and 1904 were checked against the yearly record for 1905 and 1906, we had to accept the daily record because the figures had been erased and others substituted, which is the discrepency I called attention to on pages 4 and 5 (Ab. —).
507 My tabulated statement on page 14, (Ab. —) is to show the quantity of gas manufactured, quantity sold to consumers, with the leakage for the purpose of ascertaining the divisor in ascertaining cost of manufacturing gas per M. c. f. On page 15 of my

report, (Ab. —) I have given cost per m. c. f. and in assembling these figures I have eliminated from the books of the company depreciation charges, annex taxes, interest on floating debt and bonds and cupola charge for new benches and in lieu depreciation I have inserted 5c. per m. c. f. The cost of manufacture and distribution as got from the books are shown in my report (Ab. —). I have also shown what the total repairs were in my report (Ab. —). The books do not show anything in dollars and cents with reference to leakage. The cost at the holder is based on the cubic feet manufactured, the remaining charges on page 15 of my report (Ab. —) are based on the number of c. f. sold.

In my report I called attention to the fact that the cost of manufacturing gas had varied during the five years under review the explanation so far as the books would give it is that coal was slightly higher in 1906 and the repair account is also slightly more and the fittings account was slightly higher in 1905 than in prior years which would make the cost more for that year and this increase of fittings and repairs of 1905 would more than take care of the increased cost of gas over the three prior years.

There would have been received and charged to a fund to take care of depreciation during the five years under review, based on 5c. per m. c. f. allowed by me, ledgers in order to ascertain whether the gas mentioned in the record book had all been sold and it
508 was impossible to check that with any degree of accuracy as far as I could ascertain there should be considerable more money represented in the books than was represented. I found there was received on an average in 1906 $1.04 per m. c. f. for the gas reported sold and in 1905 $1.13. From the manner in which the plant kept its books, part of the proceeds could be taken in by the officers and not accounted for; there is no check on that manner of doing business. The book marked exhibit 26 is not correct as changed. In the year 1906 the leakage is 11,493,360 which includes sales to Marion, the receipts for sales in Marion are not in the books at all. I think there were 8 payments to stockholders in 1906 of $1,500 each payment. In the answers to interrogatories the company does not account for the sales at Marion either in quantity or price. The books show that the service connections from the street curb to the house are paid for by the consumer. In the years 1902 to 1904 the matter of repairs to apparatus is included in retort account and that account could not be analysed on account of absence of the vouchers so I have not included the matter of repairs to apparatus on page 18 (Ab. —) of my report. If the books stated the actual repairs for the years 1902, 1903 and 1904 of apparatus the effect would be to increase the cost per m. c. f. of manufacturing but when it came to the final result of manufacturing and distributing it would have no effect. I talked with Glenn Averill and he said that he calculated that the profits on gas stoves, fittings and arc lamps would cover the expense of breakage. The purpose of the schedule at the top of page 19 of my report (Ab. —) is for the purpose of showing the charge for each of the five years and the average charge over the period of per cent for depreciation stated

in cents per m. c. f. charged. My work shows the reduction
509 that has been effected per m. c. f. each year in the general expense (Ab. —). There is also a schedule in regard to leakage (Ab. —). The records show that there has been an increase of leakage during the 5 years (Ab. —) which was in 1902 3.30c.; 1903 3.80c.; 1904 5.36c.; 1905 5.91c.; 1906 6.15c. per m. c. f. I ascertained the cost in cents per m. c. f. of gas distributed by taking the leakage and cost of manufacture and divided by the amount distributed. In the schedule on page 22 of my report (Ab. —) the "net cost M. & M." represents the cost to the company after the reduction of residuals, and the "M. & M." is our own cost after making the examination, in which we excluded certain of the company's charges and substituted others of our own. The company's cost exceeds ours in 1902 by $11,129.82; in 1903 $20,325.50; 1904 $13,449.19; 1905 $15,301.93; 1906 by $14,333.11. This difference consists in difference in depreciation interest, taxes, annex and sundry charges unexplained, new purifying house and benches of 1906. (These several items are shown in exhibit "K-2" (Ab. —). These eliminations are all, in my judgment proper eliminations to be made from the cost of gas.

From my experience in examining books of gas companies the reduction of the price is always followed by an increased demand. The schedule on page 25 of my report (Ab. —) is to show the increase in business for the past few years. I obtained the inventory of the plant set out in my report from the affidavit of the president of the company. In the report I have a column designated eliminated by M. M. & Co., these are items I do not consider a proper capitol charge of this company in this relation.

The reason I eliminated the item of $5,483 of high pressure
510 main to Marion is because it is charged to Marion account. In the same schedule there are items marked adjudged by which I mean to represent the plaintiff's own claim regarding the values from which I took the amount eliminated as I have explained. I consider $25,000.00 working capital, in view of the fact that they carry a large stock of material as being amply, according to their inventory they had on hand materials, represented in dollars $9,828.00. They carried a very small balance of money as working capital only a few hundred dollars. $2,500 was more than they had any time in the past. In assembling my figures I have altogether ignored the gas sold to Marion.

Estimating the sales for Sept. to Dec. upon the basis of the same increase as there was in those months last year I have made a computation with reference to the amount the company would receive for the sale of gas for 1907 based on a rate of 90c per m. c. f. I estimated the sales at 105,739,990 c. f. The first eight months' sales being taken from the records of the plant. In computing this in the basis of 90c per m. c. f. I found the gas company would receive $95,165.99. I did not ascertain from the cost of manufacture and distribution, but arrived at it from average cost of five years $64.04 which would bring the cost for 1907 to $69,715.89. The books were not kept in such a manner that I could ascertain the actual cost of

manufacturing and distributing gas in 1907 and for that reason I took the five year average. This would leave available for dividends in 1907 $27,450.10. Only $3,750 of this would need to be used for interest, leaving $23,700.10 for dividednds. This would leave the stockholders 8.78 per cent on the adjusted valuation in my report of $269,841.00 or 15.08% dividends on the capital stock. The
511 books do not show that anything was paid into the treasury of the company for the capital stock. For the years 1902, 1903 and 1904 in my exhibit of cost of manufacture (Ab. —) there are a number of blanks which were not filled owing to the absence of books and papers I could not get a detailed analysis of these accounts so all the accounts were allowed to stand and if they are not shown in detail they are in the lump amount. If the cost of the Marion plant had been taken care of by some other than the company the bills payable on Dec. 31, 1906 would have been $5,000.

I had conversations with the Averills with reference to the yearly record, but nothing was ever said to me with reference to making changes because of a fast meter. Mr. Glenn Averill denied having the book exhibit No. 26. Schedule 3 attached to my report is a summary of daily record book (Ab. —). Schedule- 4, 5 and 6 are self explanatory.

I found from the books of the company that it was their custom to charge to retort house the purchase price of coal, also a sum for shrinkage and handling in 1905 this item was 10.3c per ton.

Q. State what the books show each year with reference to the excess charged by the company in its retort account for coal over the cost and actual shrinkage as shown by the books.

A. On January 1st, 1905, the company was owing less stock on hand for about 1,080 tons; extending that at the average price $4.25, that is the cost of coal $4.15 per ton and 10c for handling, we have a balance on hand of 5,800,000 pounds; sent to the retort house was 3,240,540 pounds, 32,913,040 pounds purchased 31,786,760
512 pounds, that would leave an estimated balance due contractors on Jan. 1, 1906 of 1,126,280 pounds extending that at $4.70 made up of $4.45 the market price Dec. 31, 1906, plus a quarter for handling and the shrinkage would give you the amount due contractors $2,646.10; according to the books, there was due contractors $3,845.46 or an overcharge to the retort house of $1,199.36. I mean that in charging the 25c for shrinkage the charge has been too large. The books indicated all the way through that there had been an access charged to shrinkage in the operation of these works and would indicate that the figures I prepared from the books of the charge to retort house were excessive. Schedule 6 of my report is a comparative statement of the sales per meter and the information was taken from the daily record book, schedule 7 I got from the ledger of the company and is data regarding residuals. Schedule 8 of my audit is an analysis of the repair and renewal account for 1905 and 1906. There was a- increase of the repairs and renewals account of 1906 over 1905 of $1,317.48. Schedule 9 is a detailed analysis of the fittings account for 1905 and 1906 and was obtained from the books. The books do not show who the owners of the $40,000 of bonds

issued in 1893 are or who owns the bonds issued in 1896 and 1903. I got the information contained in schedule 12 from Glenn Averill, where I was not able to identify certain charges on the books in preparing the report, I allowed them to stand as given by the company I eliminated no charge because I could not find that it was a charge that should be made to any particular part of the plant. I made no eliminations except those found on page 23 of my report. (Ab. —). All the items in my report are taken from the books of the company none of the items which I eliminated were proper charges to be allowed to stand on the books of a Gas Co. Exhibit "M-2" is
513 an analysis of Gas Coal Account, (Defendant offers in evidence Exhibit M-2, which is objected to as incompetent and immaterial and as not being based on invoices or facts, but estimates only. Taken subject to objection.

EXHIBIT M-2.

Analysis.

Gas Coal Account, Cedar Rapids Gas Light Co.

	Purchased, lbs.	Sent to retort, lbs.
1905	15,980,000	16,702,950
1906	15,806,760	15,702,090
1906	31,786,760	32,405,040

Due to contractors less stock on hand at average price on January 1st, 1905 $4.25 per ton	508,000
Add sent to retort	32,405,040
	32,913,040
Deduct purchase	31,786,760
Estimated due contractors, 31st Dec. 1906	1,126,280
At $4.70 per ton	$2,646.10
Book figures	$3,845.46
Excess charge	$1,199.36

I heard the testimony of Glenn Averill to the effect that in the consumers' ledgers when the account is closed the leaf is destroyed and I had a conversation with him to that effect but I found in regard to that that they were not destroyed but carried to a transfer binder and when the account is re-opened the sheet is car-
514 ried back to the consumers' ledger. I found such a sheet contained in the consumers' ledger. I found an account of the American Cereal Company showing gas consumed and amount paid by it, during the time under consideration. There was the account of the meter set in 1905 but no account for 1906. The sheets showed the account and amount received for 1907 down to the close of September, but not for 1903 and 1906.

It is a part of my business to know what the depreciations are on the various kinds of property, examination of which has been made. In examination of these concerns as a public accountant, with reference to depreciation, where there is no charge to be made we enter no charge, where there is a charge to be made to determine the depreciation we make it; and where a charge is too high we make one to correct it. I exa*im*ne the books of gas and water companies and other concerns, the manner of keeping the books of all these companies is practically the same. I made an examination of the books of the gas company of Chicago and New York which was for the public.

Q. In Chicago state whether the company and city agreed on the amount of depreciation and expenses?

A. Yes sir, the repairs and renewals in the People's Gas Light Co., were 6.04c and depreciation was allowed up to 10c to cover the entire thing. I allowed here in my examination and computation 12.71c. In Chicago the Gas Company and the committee of the council agreed on 10c per m. c. f. as being reasonable as is shown on the council records. That is the company of which Mr. Cowdery is an officer. I have only found one other company that had an entry of 10c per m. c. f. for depreciation on its books and that was the
515 Consolidated Gas Company of New York. I never found out just what they did include, it was simply an estimate of 10c per m. c. f. of gas sold made after the commencement of the case.

Q. What was allowed by you for repairs and renewals in your report in this case.

A. I don't recollect what it was for the last five years—it was 8c excluding depreciation, for an average of five years.

As public accountant it is a part of my duty to know where the items should be charged on the books of gas, water and electric companies, and such as banking, railroading or the keeping of a merchant's books or manufacturer or anything of that kind. That is a part of my education and knowledge belonging to my profession and daily work.

The books of plaintiff do not set forth clearly the various transactions of the company, not kept on proper basis of revenues and expenditures, but simply of cash receipts and cash disbursements. It would be a simple matter for the bookkeeper to appropriate money—then the consumers' accounts being practically destroyed. That would only be done in a very loosely managed system. The pages should be kept for at least a year or two. The vouchers are not kept in such a way that they can be readily indentified or traced and in many cases there are no invoices and payments are made by draft and not in such a way as to be identified by the books.

The books give no history at all with regard to the various items of repairs and it is impossible to trace the time the men spent on repair work where they do not keep any proper time record.
516 We examined all the invoices and bills so far as we could get them. The books were kept with the minimum of detail in such a way that they could not readily be checked up and the manner in which they were kept would tend to conceal the transactions of the

company. My estimate of the cost of doing the office work is upon the basis of keeping the books in a proper way and it would not entail any additional work. I think my allowance of 5c for depreciation is fair. I have in a smaller figure originally and in changing it to a larger figure I took into account the repair and renewal account to cover promoting the business. I had formerly adopted a figure of 2c to cover depreciation, and my experience had been entirely with large gas companies where the allowance would be smaller than here and after making my allowance I reconsidered that matter and in connection with the account of promoting the business in justice to the company I raised it to 5c.

As shown by the books of the company and estimate of the sales for the last 4 months, about 5 per cent of the gas made goes to Marion. I have changed nothing on account of depreciation because part of the gas goes to Marion, nor nothing as interest on the capital in the Marion plant. In my judgment a part of the depreciation should be charged to the Marion plant. The interest on the floating indebtedness which was largely created on account of the Marion plant is not a fair charge to be made against the Cedar Rapids plant. They charged interest account with interest on the floating indebtedness, and ought to have charged it to construction account during the course of construction.

Q. Is the item $1,088.00 found on exhibit 14 a proper charge to include in arriving at the cost of manufacturing gas?

517 A. Not at the price here entered, it is entered at $1.15 per thousand and it should be entered at cost approximately 40c. It is not proper in a manufacturing plant to enter a profit to its expenses. It is not proper to enter the leakage, $3,146.86 in dollars and cents because so including it you include it twice, you have already included it under manufacturing expense and by so doing you increase the amount available for dividends by that amount of $3,145.83. It was not proper in exhibit No. 15 to enter gas at works at $1.15, but it should have been entered at the cost at the holder, because he has no right to add a profit to the expense in the cost of an article and it decreases the amount available for dividends as shown in Exhibit 15 by $3,103.02. The company has not included the receipts for gas sold at Marion for 1906 in Exhibit 15 during 1906 1,475,000 c. f. were sold at Marion and at $1.15 it would amount to $1,840.00. I have examined Exhibit 25 and the item of $5,627.00 for rebuilding the purifying house is not included in Exhibit D which is a statement of earnings and expenses for 1905, it is simply referred to in the body of the report. It is not charged to repair account.

Q. I call your attention to the accounts of gas manufactured as shown by that report and ask you whether it is correct as shown by the books.

A. Exhibit 26 with the substituted figures is correct. If the daily record book is correct this is wrong. The leakage for 1906 includes the gas sold at Marion and it is shown on the report and the report does not purport to give receipts for sales of gas at Marion and in that respect is not correct and the accountant has entered the gas used

at the works and office as an expense at the selling price. I can't make the analysis found in Exhibit- D and E of Exhibit 25
518 from the books of the company, the details are not in the books enough to enable me to make an analysis such as this is. The item of interest and taxes on the annex are not correctly entered in the report for assuming that the annex is a proper investment of the company they must credit it the receipts otherwise they give profit to an expense and on that assumption the item of $929.39 as shown on the exhibit ought to be deducted from the expense. The method used by Kellogg increases the cost per thousand. A part of the interest and the floating indebtedness should be charged to Marion construction and a part of the remainder of the floating indebtedness and interest on bonds is to be charged to the stockholders and not to the customers and by entering it as Kellogg has it would increase the cost per m. c. f.

Defendant offers in evidence Exhibit "K-2" which is objected to by plaintiff on the ground that it is not a report of an examination of the books of the plaintiff and does not represent an accurate summary and explanation of the books, but is made up by striking out a large number of items from the company's books and the introduction of other items not found in the books and that the exhibit is based on conclusions and opinions in reference to matters of gas engineering and practical gas operation which the witness who has prepared the exhibit has shown by his examination he is not qualified to make, and the same is incompetent irrelevant and unmaterial. The exhibit is received subject to the objection.

Exhibit K-2 was then produced and offered in evidence, the same being as follows:

519 EXHIBIT K-2.

In accordance with your instructions we have made an investigation of the accounts of the Cedar Rapids Gas Light Co., with a view to ascertaining the accuracy of the affidavit submitted by them in their action against the city and council and also of determining the actual cost of manufacturing and distributing gas in the city of Cedar Rapids. We now submit our report thereon.

As a result of our examination we have concluded:

1st. That the affidavit by A. T. Averill president contains very material errors and does not record the correct answers to several of the interrogatories therein.

2nd. The books of the plaintiff do not properly record its various transactions.

3rd. The cost exclusive of any charge for interest or for use of the plant of manufacturing and distributing gas to the consumers for the period from January 1st, 1902, to December 31st, 1906, was as follows:

1902 manufacturing 35.19c, distributing including leakage 21.81c. Total cost 57.00c; 1903 manufacturing 38.33c; Distributing and leakage 21.02c. Total 59.35; 1904 manufacturing 42.53c, distributing

and leakage 21.22c, Total 63.75c. 1905 manufacturing 38.68c, distributing and leakage 28.77c. Total 67.45c. 1906 manufacturing 41.11c, distributing and leakage, 27.01c. Average manufacturing 39.53c, distributing and leakage 24.51c; total 64.04c. Gas can be supplied to consumers of the city of Cedar Rapids at a price of 90c per m. c. f. and at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies.

520 The following statement records the actual profits for the five years as shown by the books. 1902, profit $32,121.87, dividends $12,000, depreciation $10,000, surplus $10,121.87, per cent of capital 6.75. 1903, profit $36,962.14, dividends $12,000, depreciation $20,000, surplus $4,962.14, per cent 3.31. 1904, profit $38,171.64, dividend $12,000, depreciation $13,500, surplus $13,671.64, per cent 9.11. 1905, profit $35,437.49, dividend $12,000, depreciation $10,000, surplus $13,437.49, per cent 8.96. 1906, profit $31,610.64, dividend $12,000, depreciation $13,000, surplus $6,610.64, per cent 4.41. Each year it will be observed, the company in addition to paying a dividend of 8 per cent on capital stock, set apart considerable sums in respect of the depreciation of the plant as well as large amounts to surplus. We might explain that this depreciation is not calculated on any scientific basis, but is an arbitrary amount and has no relation to the capital invested in the plant. During the five years immediately preceding 1902 only $7,500, in the year 1899 was charged for depreciation. In reply to question No. 6, Mr. Averill states amount invested during 1906, in new buildings, mains, etc., as $21,439.51, this does not include an investment of $25,974.60 in the Marion plant.

The figures set out in answer to interrogatory 10, as the total amount of gas made each year do not agree with the record of the company. The difference in years are as follows 1902, 30 c. f., 1903 70 c. f. In year 1905 the records exceed the affidavit by 2,013,740 c. f. while in 1906 the difference is 4,508,660 c. f. The 1905 difference is unexplained, but must be pointed out that, by accepting the monthly totals in the record books, the figures in the affidavit cannot be obtained.

The monthly amount of gas used in the works and sent
521 out from there to supply the customers is:

	1905.	1906.	Increase.	Per cent.
Jan.	6,929,860	9,228,340	2,298,480	33.16
Feb.	5,850,000	7,727,240	1,877,240	32.08
Mch.	6,199,280	8,487,900	2,288,620	36.91
Apr.	5,965,580	8,136,960	2,171,380	36.39
May	6,419,820	7,922,320	1,502,500	23.40
June	6,537,770	7,503,920	966,150	14.77
July	7,133,470	7,574,180	440,710	6.17
Aug.	7,455,340	8,044,080	588,740	7.89
Sept.	8,418,800	8,966,000	547,200	6.50
Oct.	9,017,210	10,349,000	1,331,790	14.76
Nov.	8,955,420	10,220,000	1,264,580	14.12
Dec.	9,854,290	11,112,720	1,258,430	12.77

That plaintiff's affidavit cannot be accepted as conclusive is obvious, an examination of the private record book, containing monthly and yearly summaries of the daily record book, reveals the fact that, in the yearly summaries of the years 1905 and 1906, the figures originally entered were subsequently erased and those as included in the affidavit substituted which plaintiff company stated was on account of adjustment for temperature, but that this explanation is not altogether correct is ascertained from examination of the daily record book for summer month-1906, where before determining the monthly totals the adjustment for temperature is made. The following are taken from this book. Coal and Water Gas made 106,616,320, adjustment for temperature 1,156,240, unexplained 33,340, excess gas in holder Dec. 31st, over Jan. 1st, 154,080. Send out to consumers year 1906, 105,272,660 c. f. From the manner in which the
522 books were kept, we found it impossible to verify the quantity of gas sold by the company. Accepting the above mentioned record book as correct in this respect, we desire to point out that the sales for 1906, including the quantity used at the works was reported as 92,306,100 c. f. while they actually were 93,779,300, the difference represents sales in Marion, which have been ignored in the company statement.

While dealing with the question of sales for the year 1906 we might point out certain inconsistencies in interrogatory No. 11 of an affidavit of A. T. Averill. From the sales mentioned there falls to be deducted 974,700 c. f. used in the works. The difference 91,331,400 c. f. was sold to consumers and the amount realized from its sales was $95,290.94 or an average of $1.04 per m. c. f. That this average is too low is shown by the following figures prepared from Mr. Averill's affidavit and the books of the company; Gas supplied at less than regular prices 3,842,400 c. f. value $4,189.52 average per M. $1.09; Gas supplied on stove contract 7,004,600 c. f. value $6,566.82, average price m. 93c; Gas supplied at regular rates 80,484,000 c. f. value $92,557.06 average per m. 1.15. From this statement it will be observed that for 91,331,400 c. f. to customers $103,313.40 or an average of $1.13 per m. should have been realized. This is $8,022.46 or nine cents per m. more than stated in the affidavit. In explanation of these figures we have to submit the following: (*a*) Practically all the gas supplied at less than regular prices is included by Mr. Averill in answer to question 40. (*b*) The gas supplies on stove contracts has been extracted from the Consumers' Ledgers and calculated at an average of 75 per cent of the regular selling price of $1.25 per m. c. f. This average price was that given by officials of the company that this amount is approximately cor-
523 rect is demonstrated by an examination of the accounts with the stove contractors. The first contract, Eclipse Stove Company was entered into in 1905 the other contract with J. D. Meader in 1906. Allowing that the gas sold in 1905, and not supplied until 1906 one-half of the total would be for year 1906. The amounts received for the year 1905 were Eclipse Stove Co., $6,922.80; year 1905 J. D. Meader $5,120.50. One-half 6,021.50. One-half 6,021.65 would depresent the gas supplied during 1906 and is practical con-

firmation of the above figure of $6,566.82, taken from Consumers' Ledger. (*c*) We have calculated the remainder of the gas supplied at the net rate of $1.15 per m. c. f. (*d*) No account has been taken of gas sold at rates more than $1.15. (*e*) The gas sold to employés at $1.00 per m. cannot be ascertained. The average price received for the sales of the year 1905, was within a fraction of $1.13 per m. and is further support for our contention that the average as calculated from plaintiff's affidavit is wrong. This difference as calculated from plaintiff's affidavit is wrong. This difference of $8,022.46 might be partly explained by the fact that the balance of gas on hand and due by consumers was at the close of the year $4,237 less than at the commencement. The balance at the former date was $5,590, while at the latter it was $9,827; loss by bad debts might explain a part of it.

The amount of gas sent out, the metered sales and the leakage for the five years are, as follows: 1902, send out 54,164,930, metered sales 49,527,800, leakage 4,637,130 per cent 8.56; 1903, send out 64,757,270, metered sales 58,880,900, leakage 5,876,370, per cent 9.07; 1904, send out 73,430,630, metered sales 65,205,400, leakage 8,225,230, per cent 11.20; 1905, send out 88,736,840, metered sales 76,957,300, used at works 825,000, leakage 10,954,540; per ct. 12.34;
1906, send out 105,272,660, metered sales 91,331,400, Marion
524 sales 1,473,200, used at works 974,700, leakage 11,493,360, per cent 10.92. The amount of gas used at works for 1902, 1903, 1904 cannot be ascertained on part of 1905, as estimated.

The figures submitted by Mr. Averill with reference to the cost of gas are not in accordance with the facts. From the cost of manufacture should be deducted return from sale or residuals; Further in stating the cost an arbitrary sum has been added in respect to depreciation and interest. The latter does not enter into the cost of manufacturing gas although must be taken into consideration when determining the return on capital invested. While not correctly prepared, the figures for the year 1906, are so far as they go *are* as set forth in the books. The difference in the years preceding 1905 are negligible. Those for 1905, are 5,627, in excess of the book figures as follows, profit and loss—Retort House $44,437.57, Cupola $1,828.93, Purifying $1,454.67, Repairs $1,940.90, Affidavit $55,289.07, difference $5,627. A thorough investigation of the book does not explain the difference. The inventory shows $15,289, expense of making service connections from mains to curb; that the expense of the connections from curb to the premises is paid by the consumer. The inventory includes $29,384, as value of 3,811 meters set the price of a meter apart from setting is less than that and the setting has been charged to operating expense. Only $5,483 value of H. P. pipe of Marion line is included in the inventory. No particulars are kept on the general books of the amount of gas to consumers' gas accounts. This is entered in daily totals only when the accounts are paid, details of the total are not kept. The charge is only made on a consumers' ledger separate and distinct from general
books and bears no relation to them. It is impossible there-
525 fore to determine whether all gas supplies has been accounted for. It is impossible, owing to want of system to

trace all vouchers of expenditures. Payments are made by draft by the account seldom specified. No statistics of the cost of manufacturing and distributing gas are prepared. From accounts kept as these are, it is impossible to prepare statements showing clearly, the information necessary for the economical and intelligent operation of the business.

3. We have prepared and submitted in Exhibit "A" particulars of the cost exclusive of any charge for interest or use of plant of Mfg. and distribution for five years. The following being an abstract 1902, cost of Mfg. $16,355.60, depreciation on plant 2,708.47. General repairs $1,915.27, fittings acct. (profit $283.99); taxes $1,716.00 officers' salaries $5,820.27. Total cost exclusive of interest $28,231.62. 1903, cost of Mfg. $21,728.34, depreciation $3,259.55; general repairs $1,460.91, fittings 972.80, taxes 1690.67, office and salaries of officers $6,015.79, total exclusive of interest $35,128.06. 1904, cost of Mfg. 27,524.24; depreciation $3,666.48; general repairs, $1,437.49, fittings, 39.60, tax $1,848.32, office and officers $7,013.93, total $41,530.06. 1905, Mfg. $29,857.67, depreciation $4,431.71, repairs $1,940.90, fittings $6,758.98, taxes $2,026.40, officers and office expense $6,865.87, Total $51,881.53. 1906, manufacturing $38,500.59, depreciation $5,330.82, general repairs $3,258.38, fittings acct. $5,943.83, taxes $1,965.36, office and salaries $7,878.20. Total cost exclusive of interest $62,877.18. To more clearly set forth these costs we have reduced them to the basis of per m. c. f. The quantity of gas manufactured and distributed was as follows: 1902 gas in holder Jan. 1st, $71,920, made during year 54,169,480, sold 49,527,800 gas in holder Dec. 31st, 66,830, gas accounted
526 for 49,594,630. Leakage including gas used at works 4,646,770. 1903, gas in holder Jan. 1st, 66,830. Gas made during year 65,191,010, total to be accounted for 65,257,840, sold 58,880,900, gas in holder Dec. 31st, 500,570, gas accounted for 59,381,470, leakage and used at works 5,876,370. 1904 gas in holder 500,570, manufactured 73,329,600. Sold 65,205,400. In holder Dec. 31st, 399,540. Total accounted for 65,604,940, leakage including used at works 8,225,230. 1905, in holders 399,540, Mfg. 88,634,210, sold 76,957,300. In holder Dec. 31st, 289,770, gas accounted for 77,247,070, leakage and used at works 11,786,680. 1906, in holder 289,770, Mfg. 106,616,320, sold including Marion 92,804,600, in holder, Dec. 31st, 443,850, accounted for 93,248,450, leakage 13,657,640. We have taken actual quantity of gas made without adjustment for temperature and the leakage differs from that recorded by the company by the amount of these adjustments. Cannot state amount used at works for first three years, but quantity would be so small as to make practically no alteration in the figures we are about to submit. The costs calculated on the m. c. f. basis are: 1902, cost of mfg. 30.19c depreciation 5.00 station cost 35.19, repairs 3.86, fittings acct. (profit .57, total repairs 3.29, taxes 3.47, office and salaries 11.75 leakage 3.30, total distribution 21.81. Total cost exclusive of interest 57.00c 1903, Mfg. 33.33 Depr. 5.00 general repairs 2.48, fittings 1.65, taxes 2.87, office and salaries and expense 10.22. leakage 3.80, total cost exclusive of interest 59.35c. 1904 Mfg.

37.53, depreciation 5.00, repairs 2.21, fitting 1.06, tax 2.83, officers etc. 10.76, leakage 5.36, total cost exclusive of interest 63.75. 1905 Mfg. 33.68, depreciation 5.00 general repairs 2.52, fittings 8.78, taxes 2.64, office and officers 8.92, leakage 5.91, total cost exclusive of interest 67.45, 1906 Mfg. 36.11, depreciation 5.00, general re-
527 pairs 3.57, fittings 6.50, taxes 2.16, office and salaries 8.52 leakage 6.15, total exclusive of interest 68.12. Average-cost manufacture 34.53, depreciation 5.00, station cost 39.53. Distribution 24.51. Average total cost exclusive of interest 64.04.

The cost of manufacture varies during the period under review as follows: 1902, $16,355.60 or 30.19 cents per m. c. f. manufactured. 1903, $21,728.34 or 33.33c. 1904, $27,524.24 or 37.53 cents. 1905, $29,857.67 or *or* 33.68 cents. 1906 $38,500.59 or 34.11 cents per m. c. f. manufactured. The increase in cost in 1906, as compared with 1905 is partly explained by a raise in the price of coal. During the first half of the year 1906, this cost $4.15 per ton while, during the second half it was $4.45. This price was increased to $4.55 in July 1907. We were able to apportion the general repair account, the cost of manufacturing might be somewhat more.

Depreciation of Plant.

We have set aside in respect of depreciation of the property at the works, but excluding mains, services, meters, etc., a sum equivalent to five cents per thousand cubic feet manufactured, as follows: 1902, $2708.47, 1903, $3259.55, 1904, $3666.48, 1905, $4431.71, and 1906, $5330.80, as against the amounts set aside arbitrarily by the company of 1902, $10,000, 1903, $20,000, 1904, $12,500, 1905, $10,000, and, 1906, 13,000. In conjunction with the question of depreciation must be considered the present practice of charging to the cost of manufacturing and distribution such expense as the refilling of benches, expense of service connections from main to curb and of setting meters. We find in 1906, the company entered into a contract to refill three benches of nines at a cost og $1,862.76. This
528 cost was duly charged to repair account, the work was not completed in 1906 and considerable of the expense fell on 1907. Having in view that these are no annual charges but recur every three years or so that instead of charging them as has been done, annual provision should be made in respect of depreciation and the expense thereafter charged against that provision. Taking everything into consideration and having in view the fact that the works have been maintained in the highest state of efficiency, we are of opinion that an allowance for depreciation of the works, at five cent-per thousand of gas manufactured is not only sufficient but liberal. We have therefore, eliminated, so far as we have been able to ascertain them, all charges not of such a nature as will recur annually and have substituted the above charge of five cents per thousand cubic feet manufactured. General repairs are for 1902, $1,915.27 or 3.86 cents per m. c. f. manufactured, 1903, $1,460.91 or 2.48c, -904, $1,437.49 or 2.21c, 1905, $1,940.90 or 2.52 and 1906, $3,258.38 or 3.57c average 2.93c. Part of this expense might be more properly

applicable to the cost of manufacture, but it is impossible to segregate the charges. Allowance for repairs, renewals and depreciation.

	1902.	1903.	1904.	1905.	1906.
Repairs to apparatus	$*	*	*	246.28	389.58
General repairs	1,915.27	1,460.91	1,437.49	1,940.90	3,278.38
Installing new stoves, meters, etc., and free work, etc.	283.99	972.80	39.60	6,758.98	5,943.83
Depreciation	2,708.47	3,259.55	3,666.48	4,431.71	5,330.82
Total	$4,339.75	5,693.26	5,143.57	13,377.87	14,922.61

* Could not be analyzed—vouchers absent.

For first three years we have been unable to ascertain the amount of repairs and renewals of works. Were these added
529 the above figures might be considerably increased. Stated on basis of cubic feet sold these are as follows:

	1902.	1903.	1904.	1905.	1906.	Average.
Repairs to apparatus	....	....	....	.32	.42	.19
General repairs	3.86	2.48	2.21	2.52	3.57	2.93
Installing new stoves, meters, etc. and free work, etc.	.57	1.65	.06	8.78	6.51	3.92
Depreciation	5.47	5.53	5.62	5.76	5.84	5.67
	8.76	9.66	7.89	17.38	16.34	12.71

The fittings account for each year is as follows: 1902, (profit of $283.99) or 57c per m. c. f. distributed, 1903, $972.80 1.65c 1904, $39.60, or 06c 1905, $6,758.98 or $8.78c 1906, $5,943.83, or 6.51 cents, average 3.92c. Before allowing these amounts to stand as charged against the operation of the business, we gave careful consideration to the question of depreciation of the mains and in view of the fact that the expense of making connections from the main to the curb have been charged to cost of distributing gas and that, in addition the expense of setting meters has been included we have concluded to make no further allowance of depreciation. The amounts included in operating, but which should properly be charged to construction, more than offset in our opinion, any depreciation on the property.

The taxes were 1902, $1,716.00 3.47 cents per m. c. f distributed, 1903 $1,690.67 or 2.87 cents, 1904 $1,848.32 or 2.83 cents, 1905 $2,026.40 or 2.64 cents and 1906 $1,965.36 or 2.16 average 2.70 cents. General expenses, including salaries of officers and clerks etc., general and office expenses, are 1902, $5,520.27 or 11.75
530 cents, per m. c. f. distributed, 1903, $6,015.79 or 10.22 cents, 1904, 7.013.93 or 10.76 cents, 1905, 6,865.87 or 8.92 cents, 1906, $7,878.20 or 8.62 cents.

In calculating the cost of gas we have divided the total cost by the quantity manufactured before giving effect to any adjustment for

temperature. The cost of distributing is ascertained by dividing the total distributing expense, including leakage, by the quantity sold under consumers we have excluded those at Marion. The leakage in our opinion excessive is 1902, $4,646,770 per cent of Mfg. 8.58 per m. c. f. Distributed 3.30 cents, 1903, 5,876,370 per cent Mfg. 9.01 per m. distributed 3.80 cents, 1904, 8,225,230 per cent 11.22 per m. 5.36 cents, 1905, 11,786,680 per cent 13.30 per m. 5.91 cents, 1906, $13,657,640 per cent 12.81 per m. 6.15 per cents. Total average $44,192,690 per cent of manufacture 11.39 per m. c. f. 5.13 cents. To ascertain the leakage, in cents per m. c. f. we calculated it at the cost of manufacture and divided by the quantity distributed. The difference between the cost of manufacturing and distributing gas as detailed by the company and as prepared by us is:

531

	1902.	1903.	1904.	1905.	1906.
Company:					
Total cost	$52,249.14	$71,799.48	$68,955.68	$85,046.96	$94,597.87
Deduct—					
Residuals	12,887.70	16,345.92	13,976.43	17,863.50	17,387.58
Net cost	39,361.44	55,453.56	54,979.25	67,183.46	77,210.29
M. M. & Company cost	28,231.62	35,128.06	41,530.06	51,881.53	62,877.18
Difference	11,129.82	20,325.50	13,449.19	15,301.93	14,333.11
Consisting of depreciation	7,291.53	16,740.45	8,833.52	5,568.29	7,669.18
Bond interest	3,000.00	3,083.35	3,912.50	3,788.75	3,750.00
Interest on loans	252.34	267.92	453.59	142.29	866.17
"Annex" taxes	220.00	215.00	162.46	175.60	185.00
Sundry credits omitted	81.96	18.18	126.72	.....	.....
"Fitting" credit omitted	283.99	.....	39.60	.....	.....
Sundry charges (unexplained)	.....	.60	.....	5,627.00	.....
New benches	.....	.....	.....	.....	.....
Capital	.....	.....	.....	.....	1,862.76
As above	$11,129.82	$20,325.50	$13,449.19	$15,301.93	$14,333.11

532 We estimate the above charges because depreciation charged by the company was an arbitrary one and in lieu thereof we have substituted what, in our opinion is a reasonable allowance for the wear and tear and final obsolescence of the plant. Interest on borrowed money is not a charge against the cost of product. The property known as the "Annex" is not used in the business. Sundry credits the exact nature of which we cannot ascertain. Fitting credit. In 1902, a profit of $283.99 was made on this account. Sundry charges. The item of 60c in 1903 cannot be explained. The charge of $5,627, in 1905, we have already referred to, also New Benches.

The growth of the business with estimate of present year is:

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	Year 1905.		Year 1906.		Year 1907.	
	Amount.	% increase over 1904.	Amount.	% increase over 1905.	Amount.	% increase over 1906.
January	6,019,100	11.88	8,199,500	36.22	9,111,800	11.12
February	5,210,500	3.85	7,052,300	35.34	7,289,000	3.36
March	5,640,300	5.82	7,500,100	32.97	8,403,800	12.04
April	5,055,100	.68	6,850,800	35.52	8,957,600	30.75
May	5,573,000	18.17	7,168,800	28.63	9,713,500	35.50
June	5,601,000	13.68	6,825,900	21.86	8,730,200	27.89
July	5,763,200	21.62	6,551,700	13.68	8,133,500	24.14
August	6,402,000	25.96	7,071,600	10.45	8,459,800	19.63
September	7,193,200	24.48	7,765,600	7.92	*8,380,635	7.92
October	8,221,600	35.06	9,047,600	10.04	*9,955,979	10.04
November	7,550,100	21.50	9,007,400	19.30	*10,745,828	19.30
December	9,551,200	39.55	9,264,800	3.00	8,986,856	3.00
Total	77,782,300	19.28	92,306,100	18.67	106,868,498	15.78
Used at works	825,000	.....	974,700	18.14	*1,128,508	15.78
Sold to consumers	76,957,300	.....	91,331,400	18.67	105,739,990	15.78

* Estimated.

534 The tendancy is for increased consumption to follow reduction in price, the city is growing and the increased use of gas for domestic purposes *are* certain to result in a large increase in the volume of business from year to year.

What is the cost of manufacturing and distributing gas exclusive of any charge for interest or the use of the plant? An examination of the accounts, already submitted reveals considerable variation in the charges, especially in repairs and fittings accounts. Eliminate these and the cost from year to year is approximately the same. The correct method is to accept the average price of the past five years 1902, to 1906 as that upon which to base our calculation, which is manufacturing total 64.04 cents. The increase in price of coal if any, will be offset by reduction in average cost effected by manufacture of large quantities and increase price of coke.

An important factor is capital invested and we must consider that plaintiff makes gas for sale in Marion and consumers in Cedar Rapids should not pay interest on the investment. We have elim-ated from the inventory submitted by Averill such property as in our opinion is improperly included, we cannot say whether the property is valued at its actual value.

Inventory of plaintiff.		Elim-ated by M. M. & Co.	Adjusted.
Lands	$30,000	$10,000	$20,000
Buildings	36,820	6,500	30,320
Walls and Fences	1,850	00,000	1,850
Works and Apparatus	117,575	1,600	115,975
Mains	118,986	5,483	113,503
535 Service Conn.	15,229		15,289
Meters	30,229		30,229
Office Fur.	1,771		1,771
Arc Lamp R. & L.	3,575		3,575
Material & Sup.	9,828		9,828
Working Capital	25,000		25,000
Total	390,924	46,083	344,841

Land and buildings eliminated represent "Annex." It is not used for the purpose of either manufacture or distribution of gas. The $1,600 included in works and apparatus represents second hand materials, not necessary to the business, $5,483 is H. P. main connecting with Marion system and properly an asset of the Marion system. Working capital is in our opinion excessive and we consider $2,500 ample.

The estimated sales in Cedar Rapids for the year 1907, based on actual sales for eight months of the year and estimating the remaining months at the rate of increase of the corresponding months of 1906 over 1905, amount to 105,739,990 c. f. Stated clearly the results are as follows. Based on an average selling price of 90c.

Surplus available for Distribution as follows:

		Amount per M c. f.
Estimated sales 1907, 105,739,990.....	$95,165.99	90.00c
Estimated cost at average 5 years.....	67,715.89	64.04c
	$27,450.10	25.96c
Interest on Mortgage Bond, $75,000 at 5 per cent	3,750	3.55
Dividends on Capital, $269,841 at 8.78 of..	23,700	22.41
As Above	27,450.10	25.96

536 As already stated the company appraises its property including working capital at $390,924 from this amount we have eliminated 40,083. If our amended appraisement of the company's property is accepted as correct and if the return is to be based on it, and not capital stock, they will be entitled to return on $269,841

For distribution to the stock holders there is available after paying interest on mortgage bonds the sum of $23,700. This is equivalent to 8.783 per cent. on said amended appraised value after deducting mortgage bonds and of 15.8 per cent on the capital stock of the company.

Yours Truly,

MARWICK, MITCHELL & CO.,
Chartered Accountants.

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EXHIBIT "A."

COST OF MANUFACTURING AND DISTRIBUTING GAS

For Each of the Five Years Ended December 31, 1902, 1903, 1904, 1905 and 1906.

	Year 1902. Divisor 54,169,480		Year 1903. Divisor 65,191,010		Year 1904. Divisor 73,329,600		Year 1905. Divisor 88,634,210		Year 1906. Divisor 106,616,320	
	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents
Coal	$						35,497.00	40.04	35,942.03	33.71
Residuals:										
Coke							18,876.80	21.30	18,221.54	17.09
Labor handling and freight							2,228.94	2.52	1,691.20	1.59
Net coke							16,647.86	18.78	16,530.34	15.50
Coal tar							1,335.39	1.51	1,114.55	1.05
Total residuals							17,983.25	20.29	17,644.89	16.55
Net cost less residuals							17,513.75	19.75	18,297.14	17.16
Coke used:										
Coke used							525.00	.60	2,768.00	2.60
Labor							197.58	.22	845.40	.79
Total coke used							722.58	.82	3,613.40	3.39
Miscellaneous:										
Gas oil including labor handling							1,105.00	1.24	5,926.30	5.56
Labor							8,512.46	9.61	8,470.68	7.94
Total miscellaneous							9,617.46	10.85	14,396.98	13.50
Total material and labor							27,853.79	31.42	36,307.52	34.05
Repairs and expenses:										
Repairs to apparatus							246.28	.28	389.58	.37
Depreciation of plant	2,708.47	5.00	3,259.55	5.00	3,666.48	5.00	4,431.71	5.00	5,330.82	5.00
Sundries including purifying material							832.60	.94	603.49	.57
Superintendent's salary							925.00	1.04	1,200.00	1.12
Total repairs and expenses							6,435.59	7.26	7,523.89	7.06
Net manufacturing cost	16,355.60	30.19	21,728.34	33.33	27,524.24	37.53				
Total station cost—carried forward	$19,064.07	35.19	24,987.89	38.33	31,190.72	42.53	34,289.38	38.68	43,831.41	41.11
Distribution:										
General repairs	1,915.27	3.86	1,460.91	2.48	1,437.49	2.21	1,940.90	2.52	3,258.38	3.57
Installing new stoves, meters and free work	283.99	.57	972.80	1.65	39.60	.06	6,758.98	8.78	5,943.83	6.51
Total distribution	1,631.28	3.29	2,433.71	4.13	1,477.09	2.27	8,699.88	11.30	9,202.21	10.08
Total material, labor and distribution	20,695.35	38.48	27,421.60	42.46	32,667.81	44.80	42,989.26	49.98	53,033.62	51.19
General expenses:										
Rent and taxes	1,716.00	3.47	1,690.67	2.87	1,848.32	2.83	2,806.40	3.65	2,745.36	3.01
Wages							663.21	.86	879.19	.96
Salaries							4,529.30	5.89	4,840.00	5.30
Expenses	5,820.27	11.75	6,015.79	10.22	7,013.93	10.76	407.36	.53	709.01	.78
Bonus (Christmas)							486.00	.63	670.00	.73
Total general expenses	7,536.27	15.22	7,706.46	13.09	8,862.25	13.59	8,892.27	11.56	9,843.56	10.78
Total operating expenses	28,231.62	53.70	35,128.06	55.55	41,530.06	58.39	51,881.53	61.54	62,877.18	61.97
Adjustment account of leakage and gas used at works at cost to manufacture:										
4,646,770 cubic feet 1902										
5,836,370 cubic feet 1903										
8,225,230 cubic feet 1904										
11,786,680 cubic feet 1905										
13,657,640 cubic feet 1906		3.30		3.80		5.36		5.91		6.15
Total cost	$28,231.62	57.00	35,128.06	59.35	41,530.06	63.75	51,881.53	67.45	62,877.18	68.12

EXHIBIT "B."

COMPARATIVE BALANCE SHEET.

AS AT DECEMBER 31, 1906, 1905, 1904, 1903 AND 1902.

ASSETS.

	1906.	1905	1904	1903	1902
Real Estate, Etc.:					
Real estate, buildings, plant and equipment at works, etc.	$236,960.05	237,329.49	214,514.34	224,616.78	169,100.00
Property know as "The Annex"	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00
Property connected with Marion extension	25,974.60				
Total real estate, etc.	270,434.65	244,829.49	222,014.34	232,116.73	176,600.00
Franchise rights	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00
Material and supplies including gas in holder and amounts due for gas supplied, etc.	12,837.00	18,384.62	16,463.38	16,390.85	15,370.89
Cash in bank and on hand	400.67	320.80	610.63	221.03	1,070.39
Total assets	$433,672.32	413,534.91	389,088.35	398,728.66	343,041.28

LIABILITIES.

Capital stock	$150,000.00	150,000.00	150,000.00	150,000.00	150,000.00
Mortgage bonds—5 per cent.	75,000.00	75,000.00	75,000.00	75,000.00	60,000.00
Total capital stock and mortgage bonds	225,000.00	225,000.00	225,000.00	225,000.00	210,000.00
Current Liabilities:					
Bills payable	31,000.00	3,000.00	10,500.00	8,500.00	
Sundry creditors (Marion included)	8,067.52	12,540.75	4,031.68	9,263.11	2,037.87
Total current liabilities	39,067.52	15,540.75	14,531.68	17,763.11	2,037.87
Surplus account	169,604.80	172,994.16	149,556.67	155,965.55	131,003.41
Total liabilities	$433,672.32	413,534.91	389,088.35	398,728.66	343,041.28

541 SCHEDULE "1."

Summary of Investment by the Cedar Rapids Gas Light Company.

As detailed in affidavit of President, dated August 9, 1907.

Lands	$30,000.00	
Buildings	36,820.00	
Walls and fences	1,850.00	
Works and apparatus	117,575.50	
Mains	118,986.00	
Service Connections	15,289.00	
Meters	30,229.50	
Office furniture	1,771.00	
Arc lamps—rented or loaned	3,575.00	
Total real estate, plant and equipment		$356,090.00
Material and supplies	9,828.00	
Working capital	25,000.00	
Total investment		$390,924.00

SCHEDULE "1."

Particulars of Investment of the Cedar Rapids Gas Light Company.

As detailed by President in his affidavit of August 9, 1907.

Lands:		
Land upon which works are located	$15,000.00	
Land upon which new holder is located	5,000.00	
Land recently purchased	10,000.00	
Total lands		$30,000.00
Buildings:		
Thirteen frame houses	6,500.00	
Shop building	1,500.00	
Store room building	1,450.00	
Coal store building	6,450.00	
Retort house (includes Nos. 7, 8 & 9)	7,850.00	
Coal gas apparatus room	3,745.00	
Boiler house	900.00	
Purifying building	5,800.00	
Pump pit	175.00	
Wooden coke shed	1,200.00	
Stable	1,250.00	
Total buildings		$36,820.00
Walls and fences:		
Retaining wall and fences	1,100.00	
Rip rapping on river bank	750.00	
Total walls and fences		$1,850.00

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Works and apparatus:	
No. 2 holder	15,000.00
No. 1 holder	5,000.00
No. 3 holder	42,500.00
Governor pit	250.00
Ammonia well	300.00
Tar well	175.00
Iron oil tank	730.00
Concentrated ammonia tank	730.00
24 tar cisterns	400.00
Contents of shop—lathes, meter prover and tools	607.50
Contents of store room:	
Two extra fillings (Parker-Russel) full benches of 9s	1,620.00
Brick, stand-pipe, valves, blower and pump	318.00
Contents of coal store:	
Scales and coal wagons	150.00
Contents of retort house:	
Three benches of 9s complete	9,800.00
Three benches of 6s complete	6,750.00
Six foot complete water gas set	4,500.00
Engine and blower	250.00
Blast pipe, tools 10 inch foul main, water gas coaling hopper	447.00
Contents of boiler room:	
Two 16 foot x 72 foot Hw. Jut. boilers and fittings	2,100.00
Steel stack, 40 inch x 60 feet high	250.00
Hancock injectors, four ton Howe scales and tools	120.00
Contents of meter and office room:	
Station meter	2,100.00
Desks, chairs, gauges and photometers	102.00
Contents of scrubber and condenser room:	
One 23 foot x 8 foot condenser	1,800.00
One 8 foot x 4 foot rec. washer	480.00
One 20 foot x 8 foot scrubber	1,800.00
One 20 foot x 8 foot final scrubber	1,800.00
One 36 inch ammonia condenser complete	3,000.00
One tar separator	150.00
Twelve 16 inch valves including connecting pipes	840.00
Contents of engine room:	
Two 8 H. P. Troy engines	350.00
Two 10 inch Connersville exhausters	750.00
One 10 inch P. & A. tar extractor	175.00
One 6 foot station meter	600.00

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Two 6 inch x 10 x 6 inch Clayton compressors	1,250.00
Platform wagon scales, 6 tons capacity	200.00
Contents of purifying room:	
Four 16 foot x 22 foot x 3 foot purifying boxes	5,000.00
Contents of pump pit:	
Two Worthington pumps	230.00
Contents of stable:	
Four horses, 1 dray, 3 wagons and 1 bob sled	1,110.00

Contents of governor pit:		
12 inch governor and 16 inch pass connections.....	625.00	
Second hand material:		
Four purifiers, 1 exhauster, 1 station meter and 1 condenser.....	1,600.00	
Yard connections—20 inch, 16 inch, 12 inch, 10 inch, and 6 inch C. I. pipe, 5 inch W. I. pipe.....	1,476.00	
Bench and tools at office.....	140.00	
Total works and apparatus.....		$117,575.00
Mains:		
27,450 feet 2 inch W. I. pipe (E. S.).....	3,902.00	
34,277 feet 2 inch W. I. pipe (W. S.).....	4,884.00	
39,450 feet 3 inch W. I. pipe (E. S.).....	9,953.00	
19,550 feet 3 inch W. I. pipe (W. S.).....	4,932.00	
17,200 feet 4 inch W. I. pipe (E. S.).....	6,267.00	
6,900 feet 4 inch W. I. pipe (W. S.).....	2,510.00	
1,600 feet 6 inch W. I. pipe (Bridge).....	768.00	
8,400 feet 3 inch W. I. pipe (H. P.).....	426.00	
5,400 feet 4 inch C. I. pipe No. 20 (E. S.).....	2,592.00	
13,650 feet 4 inch C. I. pipe No. 20 (W. S.).....	6,552.00	
21,300 feet 6 inch C. I. pipe No. 30 (E. S.).....	14,271.00	
8,650 feet 6 inch C. I. pipe No. 30 (W. S.).....	5,795.00	
6,550 feet 10 inch C. I. pipe No. 56.....	7,434.00	
3,950 feet 12 inch C. I. pipe No. 75.....	5,727.00	
550 feet 16 inch C. I. pipe No. 112.....	1,199.00	
23,760 feet 3 inch H. P. to Marion.....	3,483.00	
Add for 15,000 feet under asphalt.....	8,000.00	
Add for 68,900 feet under brick.....	28,291.00	
Total mains		$118,986.00
Service connections:		
4,000 service connections from main to curb, 20 feet each of 1 inch, 1¼ inch x ½ inch W. I. pipe.	8,000.00	
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Add for 5,334 feet under asphalt.....	2,844.00	
Add for 10,668 feet under brick.....	4,445.00	
Total service connections.....		$15,289.00
Meters:		
Three lights—1830 at $6.50.....	11,895.00	
Five lights—1173 at $7.83.....	9,184.00	
Ten lights—742 at $9.50.....	7,049.00	
Twenty lights—16 at $12.75.....	204.00	
Thirty lights—33 at $17.00.....	561.00	
Forty-five lights—14 at $24.25.....	339.00	
Eighty lights—1 at $44.35.....	44.00	
One hundred lights—2 at $54.00.....	108.00	
One hundred meters in repair.....	562.50	
Fifty meters for use.....	283.00	
Total meters		$30,229.50

Office furniture:

One safe	225.00	
One flat top desk	35.00	
One roll top desk	80.00	
One small top desk	25.00	
One table	15.00	
One copying machine	25.00	
One addressograph	150.00	
One-half partition at rear of office	225.00	
One counter	500.00	
Four pieces rubber matting	15.00	
Two 4 light fixtures	10.00	
One 16 light display fixture	50.00	
One arc lamp	6.00	
Books, stationery, etc	300.00	
Map of mains	75.00	
One roll top desk (at shop)	35.00	
Total office furniture		$1,771.00

Arc lamps rented or loaned:

350 arc lamps rented or loaned to customers, but owned by the company	3,575.00	
Total arc lamps rented or loaned		$3,575.00

Materials and supplies:

One recording pressure gauge	40.00	
Welsbach lamp supplies	250.00	
Six gas ranges	90.00	
Arc lamp supplies	125.00	
Pipe and fittings (at shop office)	175.00	
Water heaters	50.00	
Lead pipe, pipe and fittings	150.00	
Three coils rope yarn	10.00	
Sundry small stuff	25.00	
1,000 tons Youghy gas coal *and* $4.52	4,520.00	
4,100 bushels oxide	615.00	

20 tone coke	110.00	
In holder No. 1, 40,000 cu. ft. gas	20.00	
Hay, grain and bedding for horses	75.00	
In holder No. 3, 400,000 cu. ft. gas	400.00	
10,000 gals. weak ammoni-cal liquor	100.00	
12,000 gals. tar in wells	300.00	
4,000 lbs. concentrated ammonia	250.00	
10,000 gals. oil	458.00	
2,000 gals. tar in cisterns	50.00	
Pipe, crosses and tees	1,145.00	
12,905 lbs. specials, also valves and expansion joints	870.00	
Total materials and supplies		$9,828.00
Total real estate, buildings, machinery, equipment and materials and supplies		$365,924.00
Working capital		25,000.00
Total investment		$390,924.00

SCHEDULE "2."

YEARLY REPORT OF OPERATIONS

From 1897 to 1906.

Year	Sent Out	Meter Sales	Leakage	Per cent.	Coal Gas	Yield	Water Gas	Fuel	Oil	Meters in use Dec. 31	Gain
1897	23,429,110	20,899,200	2,529,910	11.0	20,974,600	5.01	2,454,500	.54	5.3	1,085	303
1898	28,349,630	25,768,300	2,581,330	9.2	21,029,300	4.88	7,320,330	.44	5.1	1,319	234
1899	35,762,650	30,000,000	5,762,650	19.0	31,945,290	4.91	3,817,360	.50	5.4	1,497	178
1900	38,100,490	34,680,100	3,420,390	9.0	31,009,000	4.90	7,091,490	.47	4.7	1,638	141
1901	43,093,010	38,530,600	4,562,410	10.6	37,996,120	4.89	5,096,890	.49	5.0	1,871	233
1902	54,164,930	49,527,800	4,637,130	8.1	43,974,000	4.88	10,159,930	.42	4.9	2,109	238
1903	64,757,270	58,880,900	5,876,370	9.0	56,585,320	4.80	8,673,630	.42	5.2	2,336	227
1904	73,430,630	65,205,400	8,225,230	11.2	59,101,600	4.72	14,229,900	.39	4.4	2,600	264
1905	*86,723,100	77,782,300	8,940,800	10.3	83,556,000	5.02	5,073,490	.42	4.7	3,309	709
1906	*100,764,000	92,306,100	8,457,900	8.5	74,858,300	4.70	30,819,900	.36	3.9	3,738	429
Marion 1906		1,473,200								274	274

*Do not agree with monthly summaries.

SCHEDULE "3."

SUMMARY OF DAILY RECORD

FOR YEAR ENDED DECEMBER 31, 1906.

	Gas made	Consumption	Water Gas taken	Water gas made	Fuel	Lbs. per M. c. f. made	Oil	Galls. per M. c. f.	Coal gas made	Gas coal lbs.	Yield per lb. cu. ft.	Candle power
January	9,355,000	9,228,340	1,011,000	1,054,090	54,050	54.	4,587	4.6	8,344,000	1,696,750	4.90	18
February	7,658,000	7,727,240	862,000	827,980	41,800	50.	3,542	4.2	6,796,000	1,377,250	4.92	18
March	8,456,000	8,487,900	1,104,500	1,097,700	48,575	44.	4,141	3.8	7,351,500	1,503,750	4.90	18
April	8,188,000	8,136,960	1,835,500	1,815,080	73,500	40.	6,976	3.9	6,352,500	1,294,000	4.90	18
May	7,929,000	7,922,320	3,000,000	3,211,040	110,950	37.	11,917	3.9	4,929,600	1,040,000	4.74	18
June	7,550,680	7,503,920	2,720,000	2,697,320	94,950	35.	10,850	4.0	4,830,680	1,034,000	4.67	18
July	7,550,000	7,574,180	2,400,000	2,402,680	87,375	36.	10,110	4.2	5,150,000	1,096,000	4.70	18
August	8,272,000	8,044,080	3,377,000	3,572,160	114,210	32.	12,994	3.6	4,625,000	1,038,000	4.45	18
September	9,142,700	8,966,000	3,891,600	4,161,730	131,500	31.	16,119	3.9	5,249,000	1,177,000	4.46	18
October	10,349,000	10,349,000	3,322,000	3,307,820	109,300	33.	12,832	3.9	7,029,920	1,452,500	4.84	18
November	10,250,000	10,220,000	3,134,500	3,116,360	108,725	34.9	12,574	4.03	7,115,500	1,464,300	4.85	18
December	11,086,000	11,112,720	4,003,500	3,994,430	133,770	33.	15,583	3.9	7,082,500	1,521,500	4.66	18
	105,786,380	105,272,660	30,661,600	31,258,390	1,108,705	35.5	122,225	3.9	74,856,200	15,695,050	4.77	18

SCHEDULE "4."

COMPARATIVE STATEMENT OF METER SALES BY MONTHS.

	1902	1903	1904	1905	1906	1907
January	4,376,800	5,054,200	5,379,700	6,019,100	8,199,500	9,111,800
February	3,881,200	4,585,300	5,017,300	5,210,500	7,052,300	7,289,000
March	4,001,900	4,593,200	5,329,800	5,640,300	7,500,100	8,403,800
April	3,596,000	4,782,100	5,090,200	5,055,100	6,850,800	8,957,600
May	3,585,500	4,408,600	4,715,800	5,573,000	7,168,800	9,713,500
June	3,456,100	4,315,600	4,926,600	5,601,000	6,825,900	8,730,200
July	3,613,600	4,210,800	4,738,600	5,763,200	6,551,700	8,133,500
August	3,737,200	4,234,800	5,082,400	6,402,000	7,071,600	8,459,800
September	4,187,100	5,189,200	5,780,000	7,195,200	7,765,600	*8,380,635
October	4,751,200	5,659,100	6,087,200	8,221,600	9,047,600	*9,955,979
November	4,534,300	5,380,900	6,213,800	7,550,100	9,007,400	*10,745,828
December	5,806,900	6,467,100	6,844,000	9,551,200	9,264,800	*8,986,856
	49,527,800	58,880,900	65,205,400	77,782,300	92,306,100	106,868,498

*Estimated.

PERCENTAGES OF INCREASE OR DECREASE.

January	15.47	6.44	11.88	36.22	11.12
February	18.14	9.42	3.85	35.34	3.36
March	14.77	16.03	5.82	32.97	12.04
April	32.98	6.44	.68 decrease	35.52	30.75
May	22.95	6.96	18.17	28.63	35.50
June	24.86	14.15	13.68	21.86	27.89
July	16.52	12.53	21.62	13.68	24.14
August	13.31	20.01	25.96	10.45	19.63
September	23.93	11.38	24.48	7.92	7.92
October	19.11	7.56	35.06	10.04	10.04
November	18.67	15.47	21.50	19.30 decrease	19.30 decrease
December	11.36	5.82	39.55	3.00	3.00
	18.88	10.74	19.28	18.67	15.78

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SCHEDULE "5."

COMPARATIVE STATEMENT OF CHARGES FOR GAS COAL USED.

	1905					1906					1907				
	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton
January	$2,960.00	1,392,400	$4.2516	4.15	.1016	3,605.00	1,696,790	$4.2492	4.15	.0992	3,836.00	1,668,000	$4.5995	4.45	.1495
February	2,500.00	1,178,100	4,2441	4.15	.0941	2,925.00	1,377,250	4.2476	4.15	.0976	3,450.00	1,500,000	4.6000	4.45	.1500
March	2,635.00	1,239,800	4,2506	4.15	.1006	3,200.00	1,510,750	4,2363	4.15	.0863	3,800.00	1,652,000	4.6005	4.45	.1505
April	2,450.00	1,153,300	4,2486	4.15	.0986	2,750.00	1,294,000	4,2504	4.15	.1004	4,705.80	2,046,000	4.6000	4.45	.1500
May	2,695.00	1,268,400	4.2494	4.15	.0994	2,250.00	1,040,000	4.3269	4.15	.1769	4,807.00	2,090,000	4.6000	4.45	.1500
June	2,700.00	1,270,900	4,2489	4.15	.0989	2,200.00	1,034,000	4,2553	4.15	.1053	3,051.80	1,312,000	4,6521	4.45	.2021
July	3,062.00	1,441,000	4,2498	4.15	.0998	2,500.00	1,096,000	4,5620	4.45	.1120	2,513.70	1,058,400	4,7500	4.55	.2000
August	3,015.00	1,418,000	4,2524	4.15	.1024	2,335.00	1,038,000	4.4990	4.45	.0490					
September	3,150.00	1,482,750	4,2488	4.15	.0988	2,765.00	1,177,000	4,6983	4.45	.2483					
October	3,420.00	1,606,000	4,2590	4.15	.1090	3,340.00	1,452,500	4.5989	4.45	.1489					
November	3,350.00	1,576,300	4,2512	4.15	.1012	3,370.00	1,464,300	4.6028	4.45	.1528					
December	3,560.00	1,676,300	4,2474	4.15	.0974	3,610.00	1,521,500	4.7453	4.45	.2953					
	$35,497.00	16,702,950	$4.2503	4.15	.1003	34,850.00	15,702,090	$4.4389	4.30	.1389					

COMPARISONS.

Charge Per Ton for Handling and Shrinkage.

	1905	1906	1907
January	$ .1016	.0992	.1495
February	.0941	.0976	.1500
March	.1006	.0863	.1505
April	.0986	.1004	.1500
May	.0994	.1769	.1500
June	.0989	.1053	.2021
July	.0998	.1120	.2000
August	.1024	.0490	
September	.0988	.2483	
October	.1090	.1489	
November	.1012	.1528	
December	.0974	.2953	

SCHEDULE "6."

Comparative Statement of Average Sales Per Meter in Cubic Feet.

	Meter Sales.			Number of meters in use.			Average sales per meter.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	6,019,100	8,199,500	9,111,800	2,600	3,309	3,738	2,315	2,478	2,437
February	5,210,500	7,052,300	7,289,000	2,610	3,309	3,742	1,996	2,131	1,948
March	5,640,300	7,500,100	8,403,800	2,620	3,309	3,758	2,153	2,267	2,236
April	5,055,100	6,850,800	8,957,600	2,641	3,319	3,771	1,914	2,064	2,375
May	5,573,000	7,168,800	9,713,500	2,791	3,410	3,836	1,997	2,102	2,532
June	5,601,000	6,825,900	8,730,200	2,913	3,461	3,887	1,923	1,972	2,246
July	5,763,200	6,551,700	8,133,500	3,009	3,521	3,934	1,915	1,861	2,067
August	6,402,060	7,071,600	.....	3,143	3,596	....	2,036	1,936	....
September	7,195,260	7,765,600	.....	3,244	3,680	....	2,218	2,110	....
October	8,221,600	9,047,600	.....	3,300	3,730	....	2,491	2,425	....
November	7,550,100	9,007,400	.....	3,308	3,732	....	2,282	2,413	....
December	9,551,200	9,264,800	.....	3,309	3,738	....	2,886	2,478	....
	77,782,300	92,306,100							

552 SCHEDULE "7."

Residuals.

	1905.	1906.
Coke:		
Coke sold and used in manufacture of water gas..	$16,906.80	$21,735.54
Increase or *decrease* in stock.....	1,970.00	*3,514.00* decrease
	18,876.80	18,221.54
Less:		
Wages	2,219.14	1,639.98
Freight	9.80	51.22
Coke Baskets	36.61	24.16
Horse Feed, etc.....	33.32	106.95
	2,298.87	1,822.31
Net Residual from Coke.....	16,577.93	16,399.23
Tar:		
Tar Sold	1,637.64	927.50
Increase or *Decrease* in Stock.....	*302.25* decrease	187.05
	1,335.39	1,114.55
Less:		
Wages	23.75	6.75
Repairs and renewals, barrels, etc.....	25.07	119.45
	49.82	126.20
Net Residual from Tar.....	1,285.57	988.35
Total Residuals.....	$17,863.50	$17,387.58

553 SCHEDULE "8."

Condensed Analysis of Repairs and Renewals Account.

For the Year- 1905 and 1906.

	1905.	1906.
Salaries and Wages.....	$1,268.90	1440.41
Tools, Materials, etc.....	502.00	806.13
Hire of Team.....	170.00	.....
Painting Gas Holder.....	.....	168.71
Trays for Refilling Scrubber.....	.....	374.80
Item paid by Draft of which no Particular recorded...	.....	378.33
Total.....	$1,940.90	3,258.38

SCHEDULE "9."

Condensed Analysis of Fittings Account.

For the Year- 1905 and 1906.

	1905.	1906.
Salaries and Wages	$6,004.09	4,789.46
Material and Supplies	6,225.01	6,847.69
Reduction in Stock	739.87	770.77
Total Expense	$12,968.97	$12,407.92
Less:		
Receipts from sale of stoves, Gas fittings and for making installations	6,209.99	6,464.09
	$6,758.99	$5,464.09

SCHEDULE "10."

Bonds Authorized and Issued.

Authorized.

Date.	No.	Value.	Interest.	Period.	Amount.
Jan. 3, 1903	75	$1,000	5 per cent	20 years	$75,000.00

Issued.

Date.	No.	Value (each).			Amount.
Jan. 3, 1893	40	$1,000			$40,000.00
July 1, 1896	3	1,000			3,000.00
July 2, 1897	5	1,000	A. T. Averill		5,000.00
June 30, 1898	5	1,000	J. Thomas	$1,000.00	
			A. T. Averill	4,000.00	
					5,000.00
Jan. 1, 1901	7	1,000	J. Thomas	1,000.00	
			A. T. Averill	6,000.00	
					7,000.00
May 27, 1903	15	1,000			15,000.00
					$75,000.00

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SCHEDULE "11."

Bills Payable.

Year.	Liability Jan. 1.	Acceptance.	Total.	Matured and paid.	Liability Dec. 31.
1897	$.....	2,400	2,400	2,400	.....
1898	.....	7,500	7,500	1,500	6,000
1899	6,000	2,500	8,500	4,500	4,000
1900	4,000	5,800	9,800	2,800	7,000
1901	7,000	5,000	12,000	6,000	6,000
1902	6,000	.....	6,000	6,000	.....
1903	.....	8,500	8,500	.....	8,500
1904	8,500	2,000	10,500	.....	10,500
1905	10,500	2,000	12,500	9,500	3,000
1906	3,000	34,000	37,000	6,000	31,000
1907	31,000	.....	.....	.....	.....

SCHEDULE "12."

Officials and Employés.

General Office, Distribution Shop and Works, October 19, 1907.

General Office.

President, per month	$150.00
Vice president, per annum	50.00
Secretary, per month	200.00
Cashier and bookkeeper, per month	100.00
Assistant bookkeeper, per month	60.00
Stenographer, per month	75.00
Meter boy, per month	25.00
Meter readers (2), per day, six days per month	1.50

Distribution Shop.

Superintendent, per month	$83.33
Six shop men, per month	50.00

Works.

Superintendent, per month	$83.33
Gas maker, per month	65.00
Engineer, per month	60.00
Fireman, per month	60.00
Four stokers, per month	60.00
Repair man, per month	50.00
Purifying man, per month	40.00
Teamster, per month	45.00
Coal shooter, per ton	.07

Street Gang.

Foreman, per month	$50.00
Four men, per day	1.75

555 The items that have been erroneously inserted by Mr. Kellogg in his report, and which tend to increase the cost of gas per m. c. f. are the following. In Exhibit "E" attached to the report the basis to determine the price of gas sold is wrong. He has taken the sales at Cedar Rapids 92,306,100 cubic feet while the expense of manufacturing includes the actual cost of making the gas sent to Marion 1,473,200. If that figure was brought into the divisor so far as manufacturing cost was concerned it would reduce the ultimate cost of gas in Cedar Rapids. Mr. Kellogg has taken but 2 years while I in my report have taken five years. For the purpose of determining the cost of any article such as gas, or to determine the duration of any factor, the period of five years is generally recognized as the standard. The period of two years does not present the operations of the company fairly and accurately for in one or two years there may be extreme charges as for example in the fittings account in 1905 and 1906 which ought to be spread over a series of years and it is not expected that five years will cover heavy charges. The two years taken by Mr. Kellogg shows a much heavier cost, 4c to 5c more than the average of five years.

Q. If you take the books as you have here what would you find that the dividend could have been declared on this method for the year 1906 on the capital stock if you knew the price of gas at 90c instead of $1.15.

A. After deducting the bond interest there is sufficient left to pay 10.8 per cent on the capital stock. The reason why there is such a discrepancy between the year 1906 as estimated and the actual result is because of the very high charge in 1906 in respect to fittings and repairs which raises the average for a period of five years.

556 The books of the company show the working capital for the year ending Dec. 31, 1901, amounted to $4,246.40. The year ending Dec. 31, 1902, it was $14,403.41; year ending Dec. 31st, 1903, there was no working capital for it had intrenched on the capital to the extent of $1151.23. Dec. 31st, 1904, the working capital amounted to $2,542.33, at Dec. 31st, 1905 it amounted to $3,164.67 and Dec. 31st, 1906 it amounted to $144.75. By working capital I mean the excess of material and supplies on hand for current use together with cash on hand and in bank money from customers, excluding Marion and current accounts—those are the real realizable assets—I only exclude certain bills payable—that is construction assets. The cash on hand Dec. 31 of each year so far as I have them are, 1902, $1,070.39; 1903, $221.03; 1904, $610.63; 1905, $320.80 and 1906 $400.67. This was determined from the books. The amount stated by Mr. Averill in his answer to the interrogatories with reference to mains installed in 1902 was $9,999.48 which sum is identical with the amount charged off for depreciation for that year. The figure of $9,427 given in the answer to interrogatory six as representing the new purifying house and equipment contains the total work done in the new purifying house and includes the item of $5,627. The answer to interrogatory 16 which states the total manufacturing cost for the year 1905 to be $55,289.07 includes the item of $5,627 as shown by the books. The books show that the company spent in new equipment and mains during the five years preceding Dec. 31, 1906, $133,405.43 which is determined from the items, depreciation written off and put back into the business $65,500. The surplus and profits after deducting dividends $48,803.78, additional bond issue $15,000 and duplication of current assets $4,101.65. I heard the testimony of Mr. Averill

557 with reference to the rebuilding of this plant and the cost during that period of time, assuming the rebuilding of the plant cost no less than Mr. Pratt has listed in his inventory, the books do not show where the company got this amount of money to rebuild the plant, but it may be explained in two ways. First, additions to capital—capital charges might have been charged to operating expense—or the money might have been collected from consumers and put right into the plant without going on the books. The books show that the company paid for Christmas boxes in 1905, $486.00 and in 1906 they paid $670.00 which is charged on the books to office expense and in assembling my figures I allowed this to stand.

Cross-examination:

The city attorney employed me to make this examination. I was employed about April. Our company have examined the books of some six gas companies. I have personally examined four and examined one twice, and among those examined were those of New York and Chicago. I will claim the privilege of refusing to state the names of the others I have examined as they were clients. I decline to answer whether or not St. Louis was one of them.

Q. In the preparation for this examination you did not make up this set of figures that is contained in the mass of material that Mr. Gillespie had on the stand yesterday.

A. Some of the figures I prepared. I did not make them all up. I made up some of them. The yellow sheets I prepared. So far as any record goes these two that are marked No. 5 and trial
558 balance Dec. 31, 1906, are all the written record of any thing did personally. The report "K-2" is made up from the other sheets which were not prepared by me, but which were prepared by Mr. Gillespie and others besides myself, except the sheets heretofore mentioned.

Q. I show you 2 sheets (of your working notes) one marked "Index to Schedule 1, 1906" and one marked "Index to Schedule 1, 1905." State whether or not the schedules and divisions of these items were made up by you from these two sheets so far as the matters *are* shown on these two sheets are concerned.

A. The two sheets are prepared from the working papers for your guidance in examining me, by Mr. Gillespie.

Q. All papers in making up your report outside those you prepared your self were brought to Chicago by Mr. Gillespie as forming his examination of the books of the company, made on the sheets from which you did your work in making up your report.

A. They are specially noted on the sheets that I made up the report from. They are marked for the purpose of being eliminated by Mr. Gillespie, but the eliminations were made by me. I instructed him to make the eliminations before he began the examination. I said I put in about four or five days here. The work of trying to arrive at the amount of gas metered by the use of the consumers' ledgers was done while I was here and was a large part of the work that was done for the first two weeks and I found by reason of the loose leaf system of bookkeeping when the account had been closed, the leaves had been removed and I was unable to arrive at the total amount of gas consumed by referring to the ledgers.

559 There are two accounts in the ledger, one for water gas and one for coal gas, and if they are correct then you can tell the cost of manufacturing coal gas and cost of manufacturing water gas separately, but I i-nored the two accounts and bunched them together. I hunted through the books, at the time the men were here for the item of $5,627, but could not find it. I had no knowledge at that time that there had been any such amount of repairs made or any claim that such repairs were made, but I did make a specific search for that item or a number of items constituting that total. I searched for that item because there was a differ-

ence between Mr. Averill's answer to the interrogatories and the books. I accepted the company's figures, for all salaries and all wages paid in making up my estimate of expense of manufacturing and distributing gas.

In arriving at the figures of the manufacturing cost of gas for 1902 I did not have the details from which to work I simply had the ledger accounts. You understand me to say that if I had the details of that account and the different items that entered into the cost of *manu*facturing it might decrease the cost, but I can't say definitely whether it would or not and the same would be true of 1903 and 1904 to a certain extent. I had the books and the bills but no particulars of the wages as to whether they were properly charged to operation or construction.

Q. You do not know whether your computation as to gas manufactured in those years is correct?

A. That is so. I don't know whether my figures for the years 1902, 1903 and 1904 are correct or not, or whether my figures or the cost of distributing, leakage, is correct or not. Assuming the books to be correct the table of distribution given by me on page
560 two of my report (Ab. 519) is correct. In arriving at the cost of manufacturing gas for 1902 I did not have in the depreciation that appears on the books, and for no other year and I did not have in the item of $5,627.00 in the cost of gas for the year 1905, and for the year 1906 I took out of the books the sum of $1,862.76 for repairs of retorts.

Q. Then as a matter of fact this table found on page 2 of your report (Ab. 519) is not a showing of the cost of gas as appears from the books of the company.

A. It is not. It is a showing of the cost of gas as computed by me after making certain eliminations from the books and additions to the books in the way of depreciation which are different from what appears on the books. If I had not made those eliminations of depreciation and these other items and had included the item of $5,627.00. I would have found the cost of gas as shown by the books considerably in excess of 64.04c. I have set out a table on page 3 of my report which includes a column marked surplus which went back into the business and all I found from the books or any other source was that the company had paid to its stock holders $12,000 dividends each year from 1902 to 1906 inclusive. I found they had written of- $65,500 for depreciation in that length of time which was carried out to gas works account, it was not a distribution of anything to the stockholders, but went back into the plant and all the surplus.

By gas sent out on page 4 of my report I mean gas metered into the holder and includes leakage, as I understand it means gas as recorded by the meter. I found in the year 1905 there was a correction on the books showing an excess metered for the year
561 and that the totals of the months did not total with the amount shown by the books before the correction, and I understand that was a correction on account of temperature, I recollect a memorandum and a lot of corrections in regard to tempera-

ture for 1906, don't recall any for 1905. If there was a fast meter which recorded more gas than actually went through, the correction should be made somewhere on the books and the correction was proper except that there should have been a notation as to why it was made. It was plain that the figures had been erased and written over.

They should have given a history of it. On page 6 of my report (Ab. 521) I give a statement of adjustment for temperature 1,154,240. I got these figures of page 7 of my report, the stove contract is based on $1.25 per m. c. f. Those are figures given to me by Glenn Averill. 75 per cent of $1.25, that was 75 per cent of what they sold gas for. He said it was 75 per cent of $1.25.

In figuring the gas unaccounted for in the years 1905 and 1906 I did not take into account the correction of the meter as shown on exhibit 26, I took the actual monthly readings. Mr. Averill's answer to the interrogatories was in accordance with the corrected readings and record. I used the monthly totals when I computed the amount of gas sent out on page 10 (Ab. 523) for years 1905 and 1906 and did not use the corrected record. If I had used the corrected record the percentage for those years would have been considerably less about 2 per cent for each year.

In my table on page 13 (Ab. 525) in making up my estimate of the cost of gas for the various years I accepted the figures of the company as regards the fittings account and repairs account except in the one instance of new benches. If I had accepted the new benches and depreciation I would have had a different result as to the apparent cost of gas as set forth in the tables being considerable more. If I had included those various items in depreciation and left mine out it would have corresponded substantially with the answer to the interrogatories, barring the amount of residuals. In obtaining a divisor on the cost of manufacturing gas I took the actual meter readings as shown on the Daily Record book, as being the gas manufactured, and I made no deduction on the meter readings for any corrections of the meter in obtaining my divisor. If I had made that deduction I would have had a less amount of gas manufactured and a correspondingly increased cost per m. c. f. but the total cost would be the same, the figures where I include the excess of gas over the correct amount would make an apparent increase in the cost at the station per m. c. f. The divisor I used in that respect for 1905 and 1906 included the amounts of gas shown by the meter before it was corrected and without the correction for temperature. I allowed nothing by way of deduction for fast meter or for temperature. I ascertained the amount of gas in the holder on Dec. 31 each year from daily record. I copied it from the book. The amount of leakage that I have shown in the report (Ab. 523) for 1905 and 1906 includes the amount of deductions which have been made on the books of the company for those two years for the meter being fast. If those amounts were taken out it would reduce the leakage to about what it was in 1904, or a little more. The divisor which I obtained was the largest that could be obtained by leaving out the

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corrections for temperature and fast meter, and this would make a small quotient at the holder. The amount of depreciation that I took off was a good deal less than that which the com-
563 pany had charged off which would also largely diminish the cost at the holder and the items of repairs $5,627.00 and $1,862.00 would slightly diminish the cost, over the five year period it would be about 1½ per m. c. f. and it would make about 7c difference for the year 1905. I said that 5c. a m. c. f. for depreciation was a larger amount than I first figured, on account of having based my figures on my experience in Chicago and New York. I think they make ten billion cubic feet of gas in Chicago yearly and about 13 or 14 billion feet in New York. In New York they make about 2-5 water gas and 3-5 coal gas, but I don't know definitely the proportion. In New York the final figures agreed upon between the city and the company for depreciation and repairs was 10c. per m. c. f. The average for the last 5 years was 8 and a fraction cents. I divided the amount set aside for depreciation by the quantity sold. I arrived at the amount of gas used at the works from the consumers' ledger and I included that in the item of leakage that is all I did with it. I have made a calculation in my report in regard to gas coal account for 1905 and 1906, but found no inventory at the beginning of either year so as to ascertain the amount of coal on hand and I had to figure on the amount of coal purchased in 1905 and I got that from the bills, then figured on amount of coal sent to retort for 1905 and found that year that there was more coal sent to the retort house than was bought. I assume that I had all the bills for coal bought in 1905 because I assume the books are correct, and the books show that those were all the bills purchased in 1905. I ascertained that they charged the coal to the coal shed when it was first paid for and not when it was received, so that on the first of the year the amount of coal that had been paid for would not necessarily show the amount of coal that had been put
564 into the coal shed and I had no way of correctly determining how much of the coal there was in the shed at any time that had not been paid for, and I had to start off with an estimate at the beginning of the period and finish up with an estimate, but you can arrive at the amount fairly accurately from the books and bills.

With reference to the $1,862.00 that I had I threw out an account of repair of retorts, I don't know personally whether the old retorts these items were bought to replace were worn out or not.

Q. I believe in Exhibit K-2 you have eliminated every thing in regard to Marion except the amount of gas sent up there.

A. Yes. The cost of the high pressure main from the works to the city limits is included in Marion and I did not include it in my computation for this city. When I computed my depreciation I had in mind the whole works including Marion. I had in mind the whole system, I had everything in mind when I figured the 5c.

Q. How did you eliminate the amount of gas sent to Marion?

A. Take Exhibit "A" (Ab. 537) I accepted as a divisor the total amount of gas manufactured divided into the whole manufacturing cost including the 5c. and in order to get the distribution per m.

c. f. I took the Cedar Rapids account of manufactured 106,616,320 as divisor as far as manufactured was concerned, I divided that into $43,831.00 which gives an average of 41.11c. per m. c. f. manufactured. To get the distributive cost in Cedar Rapids take the total distributive cost $1,945.77 and divide it by the total quantity distributed in Cedar Rapids 91,341,300 and to the two figures
565 then add leakage which is the difference between the quantity sold in Cedar Rapids and Marion.

To arrive at the cost of leakage I multiply what I compute to be the total leakage for 1906 by what I compute to be the cost per m. c. f. and divide the product by the total number of c. f. distributed in Cedar Rapids and thereby arrive at the cents per m. c. f. of leakage which gave 6.15c for 1906 and by my computation make the total cost per m. c. f. for 1906 $68.12c.

Redirect examination:

That $68.12c includes depreciation on the whole system.

I made the Exhibit K-2 from the data collected by Mr. Gillespie and myself from the books. The books do not show without deductions the actual cost of manufacturing gas. The books show only $7,500 charged off for depreciation prior to 1902, during the entire life of the plant and that was in 1899. At the time I instructed Gillespie to make the eliminations for depreciation I knew what charges had been made for depreciation by the company. Assuming that the books handed me by the company contain correct items as to the cost of manufacturing and distributing gas the computation I have made on page 2 (Ab. 519) is correct.

It would have no effect on the final result with regard to the cost of manufacturing and distributing gas to have made an allowance and correction for temperature as found by the books. Assuming the figures to be correct as stated in the small record book, Exhibit 26 and use them for a divisor instead of the figures entered in this report—the cost at the holder would be increased to a slight
566 extent, but that would be offset by a corresponding reduction in leakage which is stated in cents per m. c. f. at the back—Any reduction in the cost of production would make a corresponding reduction in the leakage and one off-sets the other.

Working capital is that money in the business or material in the business readily available to use for the purpose of running the business—the amount of money used to operate the business.

I can't give the items in detail from which I made up the working capital of this company but can give the totals. For 1901 the assets amounted to $12,923.15, liabilities $8,676.75, difference $4,246.40. In the assets I included materials on hand, cash due from customer-cash in bank and on hand. The liabilities would include bills for coal but not interest on bonds or floating debt.

December 21st 1902 I have a working capital of $14,403.41 and arrived at that in the same manner as for the year 1901. I figured the cash due from customers as a legitimate part of the working capital in this case and the materials on hand like coal and supplies. In 1906 I computed the working capital in the same way as other

years and excluded from amount of bills payable, the amount of Marion plant $25,974.60 which left a deficit of $525.40. The total material on hand at that time was $12,837, which includes gas in holder and the amount due for gas supplied. I also deducted sundry credits amounting to $8,067.52. If the company only charged to the various accounts representing material purchased when the material was paid for then the liability that I find on the books for material would not represent the material that was purchased and not paid for.

In arriving at the amount of money, $133,465.33 spent
567 for new construction during the last 5 years I have added the depreciation charged off for that period and what I call the surplus profits and the bonds that were issued during that period and the item of $4,101.00 depletion of current assets. The trial balance of Dec. 31st each year show bills and accounts payable to one for Dec. 31st, 1906, shows credit for tar account $988.35 and one for coal $3,585.00, oil $972.44, Glenn Averill entry key $80.00, a sum to labor $1,131.86, sum to Economy Furnace Co. $535.00. There are also assets cash $257.17, J. R. Meader $924.84, A. T. Averill due the company $1,910.00 in C. R. Nat'l Bank $143.56, and other items.

J. C. GILLESPIE, re-called for further direct examination.

The several loose sheets of paper containing memoranda and figures, and produced by me, were obtained from the books of plaintiff, and are correct. In the examination I conducted, I examined the vouchers and bills and the entries of the books of the plaintiff and followed up my enquiry by calling for the vouchers and bills where the items did not appear on the books, where I wanted to identify them.

I made up these figures and statements I have talked about under direction of Mr. Hall and made up the account as he told me, leaving out certain things that he told me to insert, and he gave me general directions as to how to make up this statement from the books of the company when he was here, but he went away and I undertook to carry out his instructions. I found the books mathematically correct. The only thing I found in the books in the way of a correction or anything of that kind, that I made a note of and undertook to work
out was this change of Exhibit 26, the book in regard to
568 the meter reading. The items in the working sheets which I turned over to Mr. Hall are exact copies of the entries in the books.

Thomas Suchomal.

The defendant then produced the witness THOMAS SUCHOMAL who being first sworn testified as follows on direct examination:

I live in Cedar Rapids, am foreman of the Cedar Rapids Gas Light Company, have been foreman for fifteen years and have been employed by the company for 23 years.

The building at the corner of 8th avenue and south 1st street in which the scrubbers and condensers are housed was built in 1884;

the building at the corner of 7th avenue and First street was built, had been built before I commenced to work for the company and practically all of the other buildings have been built since I have been with the company. The barn was built in about 1900. About nine of the old benches of retorts were used in the riprap wall. The work of putting in the rip rap was done by men who were hired by myself for that purpose, and was charged on the books of the company as new work, some men who are working for the company may do that work when they have nothing else to do, but in that case that portion of his time is charged to rip raping of the wall.

The engines and exhausters were installed in 1903. The compressors are used for the purpose of taking the gas to Marion, sometimes one and sometimes the other according to the way they are connected. The 6 foot gas apparatus was installed in 1892 it was not used continuously from that time, but was used off and on,
569 and there were years we didn't make much water gas—sometimes we made a good deal and then we wouldn't run it for weeks, a new shell was put on it in 1898.

The three benches of 9s were installed in 1904. Two of these have been refilled since, but the other one has not been refilled. We are using two benches, or 18 retorts at the present time, we have 45 retorts in all. The building for the benches of 6s was built in 1884 and that for the 9s in 1904. We have one water gas apparatus in operation at the present time. The relief holder was built in 1884; the small holder was built before my time. The large station meter was put in — 1905. It was a second hand meter when it was put in the works, the coal storage building was built in 1904 and the purifying boxes were put in in 1905 they were second hand also, the old purifying boxes have been sold recently. The station meter house was built in 1884. The scales shed in 1905, the brick paving was laid in 1905, the boiler house was built in 1905 and the boilers installed at the same time, the boilers and buildings, exhausters, and engines are in good condition.

The wood and coke shed was built in 1899. The meter prover for the small meters was put in in 1903. We refilled one bench of nines last fall of last year and two this year. We fired the one right after it was refilled three benches of sixes in the fall and winter of 1905, one bench lasts about two years and 6 months. My men take out the old benches and everything is made ready for the contractor to put in the new benches.

The gas company has had one of the teams for two years and some of the horses have been there five or six years, but the teams they drive to the coke wagon they change pretty frequently.

570 Q. Where is the air pumped into the gas?

A. We don't pump any in at all

Q. You don't purify it in that way?

A. No sir. The old engines and boilers are there yet the steel stock 40 inches in diameter and 60 feet high was erected in 1905. The two compressors were installed one for the exhauster and one for the high pressure main for Marion. The high pressure main for Marion was laid in 1906; the rectangular washer was installed in

1906 at same time as the condenser compressor and scrubbers also the ammonia concentrator was installed in 1906—the 12 and 16 inch valves for the inlets and outlets in the scrubber room were erected in 1906, the 6 foot station meter used to measure water gas in 1884, platform scales 1905. The duplex Worthington pump one in 1893 and one in 1894 the size of the latter is 7½ x 4½ x 10.

The Connelly Automatic Governor was installed in 1890. At the time the new purifying house was built the yard connections were all changed to 16 inch connections, or with 20 inch. The 80 feet of cast iron yard connections were put in in 1904, also the 184 feet of 16 inch cast iron yard pipe. Some yard connections were put in in 1904 and some in 1905, and there was some 12 inch put in this spring and some of it was installed when the new holder was built. There was about 270 feet of 10 inch yard connections installed in 1904, and there is 270 feet of wrought iron pipe yard connections installed in 1892.

The large holder was painted last in 1906, it had been painted two years before that time. Prior to the erection of the building called
the coal storage a brick building stood where that building
571 now stands, part of it was torn down in 1904. The building used for storing of coal was constructed in 1904.

The first year I was with the company we used the cinders for filling up around the works, between the rip rapping and the works, now we have been putting them on First street.

Cross-examination:

During all the 23 years that I have been at the works the plaintiff has occupied and used the land out to the rip rapping, and I never heard anybody claim that that land belonged to anyone else during that time. Somebody said when we put the purifier buildings up, that we had put *it* out too far. The buildings were built on the ground along the bank of the river. It was about 30 or 40 feet from where the large holder is located to the river. The big holder was built on the bank and not on filled ground. I was present when they built the purifying building and saw them dig for the foundation and it was solid soil and not made ground. The company has occupied the land out to the rip rap wall ever since I have been there.

There is no considerable amount of fire clay in the rip rapping all there is is from some of the old benches, and the men who did that work were hired outside of the operation of the plant. There were two new benches of nines put in in 1907 and three in 1906. The old ones were worn out by the first of this year, and were not in a condition that they could longer be used. The first benches of 9's wore out in 18 months, the last two in about two years. My experience has been that these benches wear out in about eighteen months
or two years and then they have to be repaired. Our ap-
572 paratus is not so that we can speed up very much on account of our purifying. The benches are therefore used, to an extent depending on our water gas.

The two benches of 6's I spoke of yesterday as lasting two years and a half have not been in use all the time, they were used two or

three months last spring and were then shut down and they are more or less worn out. They were liable to fall down anytime. If we should start them up I think they would fall down and new ones would have to be put in. The size of the connections from the benches to the retorts is ten inches, and from the exhausters to the condensers is ten inches. The size of the connections to the rest of the works is sixteen inches. The ten inch connections I have mentioned are two small now and that is the reason why we have to regulate our making of gas. It will be necessary to replace those connections from the hydraulic mains clear to the condenser and exhauster and we would need a new tar extractor new valves and everything. We will have to take that part of the works out and put in new—we expected to do it since we built the new works in order to have it large enough to go to the benches.

I was asked about the large station meter; the large part of the cost of the meter is the inside part of drum and the drum of this meter was new when it was installed. I tested the meter with the prover that was sent here—I don't know who it was sent by—I found the meter fast when we found the meter fast we put in more water and if we find it slow we take it out and regulate the water level according to the test. By setting the water level we determine the place to keep it so as to correctly register the amount of gas. I assisted in determining how much too fast the meter was run-
573 ning and found it to be 4½ per cent. Mr. Glenn Averill was present all the time the test was made. New scrubbers and condensers were put in in 1906, the old ones were discarded because they had become inadequate and out of date, they don't use that kind any more and were of no value as scrubbers and condensers. The purifiers were replaced in 1905 because they had become too small and worn out and were worth nothing in the gas business.

The machines and apparatus is very much crowded, in the building. The exhausters and that machinery is crowded—we can't take care of the gas now—we have to make it when the consumption is not so great, if the consumption was increased we would have to put in new machinery, we could not make the amount without doing so, and there is no room for putting new works on the grounds where the plant is now located, they would have to procure new grounds and build new buildings. The room about the water gas apparatus and room for clinkering and all that is inadequate, and we hav-n't room for that. If they manufactured more water gas they would have to build a new building and build the apparatus over and there is no room on the side of the street where the plant is to do that.

I know about the operation of the high pressure system. The high pressure is to deliver the gas into the low pressure mains, there is a pressure on those mains of ten pounds at the works. The low pressure pipes lay at the weakest points on the west side and at the outset they were not large enough to bear the expense of taking the street, and the high pressure main was run clear up the west side and a governor put in and the gas was run out into these low pres-
574 sure mains in order to increase the pressure in these localities, and it did relieve the pressure and after that he had no com-

plaints from the west side. If the company had not put in those high pressure mains they would have had to dig up all the low pressure mains and replace all of them. The high pressure mains were a matter of repairs to those on the west side.

About one-half of the gas that is compressed goes to the west side. This can be told by taking off the compressor and shutting off the gas on the west side and taking the valve off and measuring it. We are able to tell with pretty close accuracy and in my judgment about one-half of the gas compressed goes into the west side system, and into the points of that system where the pressure is weak, or runs below two inches of water level. There were weak points on the east side as well as on the west side, particularly in the Central Park district, and the high pressure was put in to relieve that on the same plan as it was put in on the west side, using the same high pressure main that goes to Marion.

It is a fact that practically the entire works have been rebuilt since 1903.

There was never a strike at the works. It is difficult to get men to work in the gas plant, but not this time of the year.

M. L. Healey.

The defendant then produced M. L. HEALEY who being first sworn testified as follows on direct examination.

I live in Cedar Rapids have lived here thirty years, am a customer of the plaintiff. I have been taking gas since the mains were
575 extended to the south end of town. Shortly after the mains were extended Mr. A. T. Averill spoke to me one day and mentioned the fact that there wasn't many who had made connections and I went to figuring on putting the gas in and went to the office and the manager said he would put in the fixtures and later on put in the stove, and a short time after I put in the stove I got a bill from the gas company and with it was a bill for making the connections. I called at the office and called their attention to the fact that the connections were to be made free under the contract and some young fool there answered that they were not doing that kind of business any more. I said do you mean to tell me that the Gas Company is repudiating the contracts of its manager, well they said, we aren't living up to any contracts made by Mills, he made too many promises. I paid the bill. Three or four years after that I got notice that the gas consumed in October was about three or four times the amount in previous months—some $14.00 or $16.00. I thought there was some mistake about it and I went into the office and called for Glenn Averill and showed him the bill and he said, "there does seem to be something wrong, you leave that bill and I will look it up and let you know." I left the bill with him and the usual notice came that if the bill wasn't paid on the 25th of the month the gas would be shut off. I still paid no attention to it, relying on the word of Glenn Averill and a young man came to my house and said he had been directed by Mr. Averill to shut the gas off, and regardless of all protests of my wife he cut it off and took out the meter. I saw

the officers and the conversation with the man and my wife was all gone over, and they laid it all on the man in charge of the office in the absence of Glenn Averill, he had been there quite a good
576 many years. I did not pay the bill until the meter was placed back that is all I know or want to know about their turning off gas.

Recently I called at the office and asked them to leave a meter at the house I sold and was moving out of, that the new owner wanted to use the gas, and they said they didn't want to sell any gas to him unless they had some guarantee for the payment of the bills.

My occupation is that of Deputy U. S. Marshal, I have held that position about twenty years.

Cross-examination:

My recollection is that this trouble occurred four years ago last October, we had been away a part of the month when we received such a large gas bill. The officers of the company claimed that the meter showed that I had used that amount of gas. I got the gas meter reinstalled before I paid that bill, if I hadn't I wouldn't have paid the bill yet. I had the satisfaction of making them put the meter back before I paid the bill. I thought then and think now that I paid four times too much. The meter was back in my house by ten o'clock of the next day after it was taken out.

Alton B. Adams.

The defendants then produced the witness ALTON B. ADAMS, who being sworn testified as follows, on direct examination.

I reside at Worcester, Mass., I have been a citizen of Massachusetts since 1893 or 1894 I wouldn't say positive, I am a consulting engineer. I have been an independent consulting engineer since 1894. I am a graduate of an engineering school called "The Warren
577 Scientific School." My experience with gas plants dates about the 90's. For some years before that I had been practicing engineering in connection with electrical power matters and relative work but not gas work—and the building of electrical power and electrical machiners and the designing thereof. In my experience I have become familiar with the life and durability of all kinds of iron. I have made a study particularly of the life of cast iron pipe and other structure in connection with gas plants since about 1900 before that I had the knowledge that comes to the practice of an engineer dealing with those materials added to other properties—I had before 1900 the knowledge of a practicing engineer with reference to timber, masonry, iron and steel structures, and since then I have made a particular study as to the life of those structures in gas plants and electric plants. In Massachussetts there is data and statistics collected by a tribunal appointed by the state, and known as the Gas Commission created in 1885, which commission exacts an annual report from each company or person conducting a gas or electric business, setting forth all of its financial operations and its physical equipment, and these reports are bound and published in

pamphlet form. The reports are open for public inspection and I have spent a great deal of time in the last seven years studying these returns, from 1885 down to date, particularly with regard to the life of structures they report on and has supplimented that study by going to the structures and running them down, going to see the things themselves, in many cases not relying on the reports.

The nature of cast iron is the same in any situation that it is used—I would not assume to say that in the different uses to
578 which steel and iron are put, they do not come under circumstances that might tend to give shorter lives in some cases, but they have the same nature as a rule except where they came under specially hard conditions and are subjected to gases, acids or bad soil, the life would be the same, whether they were devoted to one purpose or another; you will find in all work special structures for exceptionally hard places to fill and you would find a difference in life.

I have examined the gas works of plaintiff, was through the works yesterday.

Q. What is the life of a brick building reasonably well built and taken care of.

Objected to by plaintiff because the witness has not shown himself competent to testify as to the value or the apparatus making up the gas works.

A. A fair estimate of the useful life is eighty years. I am speaking now, when I speak of the lives of these structures, unless I modify it, simply of the life of a thing in regard to physical decay—I speak of the rusting out or the wearing out of the structure or machines and I do not refer to the question of a thing being inadequate by reason of its size or its becoming *absolete* by reason of something better coming into the market. The useful life means the time that the building will last as a physical unit, a substantial physical unit. After the expiration of the useful life of the building there is still left 20 per cent. of its cost. I am stating the per cent. of the cost of the structure. I have not examined the wooden buildings sufficiently to testify as to the life of them. New wooden buildings reasonably well built in the gas business has a fair life of 66
579 years with no residual value. I have not had the coal shed in mind so I could classify it—I would have to examine it further. Assuming reasonably good care and good construction the life of a gas holder I would say was 80 years with a residual value of 20 per cent. of the cost. As far as the benches are concerned, the arches and iron work has a useful life of 40 years with a residual value of 20 per cent., the retorts and fills are new and I have to add a shorter period, say a couple of years, owing to how it is used and filled, and I consider that the retorts are cared for by the current repairs.

The useful life of the water gas set is thirty years and there is a residual value to that of 20 per cent of the price of the apparatus when it is reasonably used and cared for. The useful life of the tubular boilers is thirty years and there is a residual value of 20 per

cent sure on the casting of the boiler, presuming all the time that you have reasonably good care in the operation. The useful life of residual meter is fifty years with a residual value of 20 per cent of what the meter cost new. I speak of the ordinary cast iron from station meter, the standard form of station meter most used.

I noticed a list of meters in the works and they are the standard kind and form of gas meters. The useful life of the scrubbers and condensers is forty years with a residual value of 20 per cent, the ammonia concentrator complete 40 years with residual value of 20 per cent. The life of new engines in gas works, properly used would be 40 years with a 20 per cent residual value. I saw nothing about the engines to indicate that they would have any other useful life if they were new machines. The useful life of the exhausters and tar attractors is forty years with a residual value of 20 per cent. The station meters are of the type that ought to last fifty years,
580 with reasonably good repair and have a residual value of 20 per cent. The compressors have a useful life of 40 years with 20 per cent residual value. The purifying boxes fifty years with 20 per cent residual value on the new goods at the end of the 50 year period. The length of time the oxide can be used depends that you pass gas through it, we don't consider it a part of the gas plant at all. The useful life of the duplex pumps is 40 years with residual value of 20 per cent, the pipe connections is the same. The automatic governor used to regulate the pressure of gas is 40 years with 20 per cent residual value of the new cost. The yard consections 80 years residuals, 20 per cent. I am referring here in the main to cast iron pipe, but I include in the figure both cost and wrought iron pipe that would ordinarily come into yard class, wrought iron pipe is less valuable but it holds down the same useful life of the two materials, but the bulk of that pipe would be cast iron pipe.

Q. Take the street mains, what is the useful life of cast iron pipe used for street mains.

A. Wth fairly good clean soil 100 years, with a residual value of 40 per cent of new pipe. Wrought iron pipe in the distributive system in fairly good soil would have a life of 80 years with a residual value of 20 per cent on the cost of new pipe. Useful life of specials 80 years and residual value 20 per cent. of new cost, the valves, extension joints are the same.

The service connection 66 years with no residual value. Consumers' meters and services forty years with residual value of 20 per cent on new cost assuming all the time that you have reason-
581 ably good care—this is essential to all these values I have named. The useful life of the office and outfit is 25 years with residual value of 20 per cent on the new cost.

That is only approximate figure, the most reasonable approximation I can name. There are things that would last much longer—the safe for instance, on the other hand there are things that last a much shorter time. Take the tools all together and I put their life at 40 years, around a machine shop with a per cent of residual value, barring such tools that wouldn't be considered anything more than

operating expense. I am speaking of the lathe and other edge tools about the shop.

With wrought iron pipe a coating helps to lengthen the life very decidedly, but with cast iron pipe the natural oxide that forms on the surface, in my opinion is a very satisfactory coating perhaps as good as any you could put on, but these figures I have referred to for cast iron refers to the coated, and the wrought iron would require some coating—there are various compounds that are used. I am assuming in fixing the life of the pipe that good business judgment would suggest some coating. The only other item I have is are lamps which is a small item, the reasonable useful life of which is 20 years with a 20 per cent residual value.

By residual value I mean that after a thing has reached a state of decay that unfits it for further use as a unit, that it has a value for other and saving purposes, the least value to which it can fall is its scrap value—an old brick building has a scrap value—the bricks are worth more than it costs to get them out of the wall, and it may come in in extending a new building. In a gas works I think that parts of the decaying structures would be used.

582 I have made an estimate of the allowance that would be proper for depreciation on the physical properties in this plant. There are rules of estimating the depreciation for physical decay and I am familiar with them. To explain the method that I adopted in arriving at the proper percentage for physical decay, my view is when any particular structure goes into use it necessarily begins at once, due to wear, tear and rust and to change in molecular conditions to shrink in value, and if we can settle from experience and observation and learn anything from the experience and observation of the best engineering judgment, we can apply to the article the number of years it will last with reasonable accuracy. I think the depreciation is measured by dividing the new cost of the article by the years of its life. If the usefulness can be enjoyed forty years, half of that usefulness is gone when it has been used twenty years. For instance, if an article lasts 50 years and it costs $50.00, the shrinkage each year is $1.00, due to physical decay. I have made an estimate of the percentage of depreciation applied to the inventory as made by Mr. Pratt and assuming his values as the new cost of the parts of the gas plant. I have included in this computation as to depreciation all of the items under Mr. Pratt's estimate Exhibit 19, except the items of paving. I have not included any paving. In some instances I have taken the sum of some of his values, where the rate per cent. was the same. The life of the brick buildings is 80 years and there is a residual value of 20 per cent. in those structures at the end of the 80 year period. The 80 years divided into 100 per cent. of its value gives 1¼ per cent. a year, but that 1¼ per cent. shrinkage per year bears only an 8-10 of the value of the cost of the thing; at the end of its life it has 2-10 of its cost, therefore the

583 proper rate of depreciation in physical goodness is 1 per cent. of the value. The value assigned to the brick buildings and walls is $39,515.00; 1 per cent. of that is $395.00. The wooden buildings which have a life of 66 years with no residual value; their

value being $4,111.00; the shrinkage is 1½ per cent. per year or $61.00 *dollars*. On the holders to present the shrinkage value each year of the physical value is found by multiplying 1.25 by 8-10, giving 1 per cent. of the new cost. The new cost is $60,085.00, and the depreciation is $600.00. On the yard connections the depreciation is $14.70; benches $331.00; water gas apparatus $491.00; boilers and stock $62.00; scrubbers and condensers $197.00; engines and pumps $55.00; purifiers $80.00; governors $54.00; machinery and tools $24.00, scales $4.00; horses and wagons $94.00; small pipe about the works $7.50. Cast iron pipe and specials have a life of 100 years with a residual value of 40 per cent., and the result of the computation for the percentage of the new cost to be allowed for physical deterioration each year is one times 6-10, or 6-10 of 1 per cent. of the new cost of cast iron pipe and specials which is $641.00, the resulting sum 6-10 of $641.00 I make $3.85. And all the foregoing items are figured on the same theory and the amounts are for annual depreciation. The wrought iron street mains have an annual loss in value due to physical deterioration of $390.00, cast iron street mains $237.00; valves and specials $8.80; service connections $121.00; meters $601.00; arc lamps $143.00, and contents of office and shop $92.00.

The total value of all these items according to Mr. Pratt, including everything except the paving, that he has mentioned in his depre-
ciated articles here is $291,889.00, and the totals of the sev-
584 eral sums of these articles which represent shrinkage in value
each year is $4,085.00. That $4,085.00 on the 92,306,100 feet of gas sold in 1906 represents 4.53 per cent. per M. c. f. of gas sold as the shrinkage in value of the physical assets due through decay, rusting out and wearing out. Figured as a percentage $4,085.00 is 1.35 per cent of the new cost of Mr. Pratt of $291,889.00, which is as fair an estimate as I can make for depreciation due to physical decay, rusting out and wearing out. The paper marked Exhibit N-2 represents my figures in detail and my method of arriving at them.

Defendants now offer in evidence Exhibit N-2, which is objected to as being incompetent, irrelevant and immaterial, the witness having not shown himself competent to testify to or to compute the depreciation on machinery or anything entering into the plaintiff's works. Taken subject to objection.

585 EXHIBIT "N-2."

Cedar Rapids Gas Light Co.

Annual Depreciation on Valuation of Col. Pratt.

Parts of plant.	Years of life.	% residual value.	% Annual depreciation.	Dollars new value.	Dollars depreciation.
Brick b'ld'gs and walls.	80	20	1.25x.8 equals 1.0	$39,515	$395.00
Wooden buildings	66	0	1.5	4,111	61.00
Holders, tanks, wells..	80	20	1.25x.8 equals 1.0	60,085	600.00
Yard connections	80	20	1.25x.8 equals 1.0	1,476	14.7
Gas benches	40	20	2.5 x.8 equals 2.0	16,550	331.00
Boilers and stack.....	30	20	3.33x.8 equals 2.66	2,350	62.00
Water gas sets.....	30	20	3.33x.8 equals 2.66	18,500	491.00
Scrub'rs, cond'nsrs, etc.	40	20	2.5 x.8 equals 2.0	9,870	197.00
Engines, pumps, etc....	40	20	2.5 x.8 equals 2.0	2,755	54.00
Purifiers	50	20	2.0 x.8 equals 1.6	5,000	80.00
Governor and station meters.....	50	20	2.0 x.8 equals 1.6	3,427	54.00
Machinery and tools...	40	20	2.5 x.8 equals 1.6	1,279	24.00
Tools for coal handling			8.0	270	21.6
Scales			2.0	200	4.
Horses and wagons....			8.0	1,185	94.00
Small piping	66		1.5	504	7.5
C. I. pipe and specials.	100	40	1.0 x.6 equals 0.6	641	3.8
W. I. street mains....	80	20	1.25x.8 equals 1.0	39,125	390.00
C. I. street mains.....	100	40	1.0 x.6 equals 0.6	39,570	237.00
Valves and specials...	80	20	1.25x.8 equals 1.0	881	8.8
Service connections ...	66		1.5	8,000	121.00
Service meters	40	20	2.5 x.8 equals 2.0	30,090	601.00
Arc lamps	20	20	5.0 x.8 equals 4.0	3,575	143.00
Contents office & shop.	25	20	4.0 x.8 equals 3.2	2,924	92.00
				$291,889	$4,085.00

On gas sales of 92,306,100, in 1906, depreciation equals 4.53 cents per 1,000 feet.

Percentage of depreciation, 1.36.

Q. What experience have you had in examining and valuing properties of gas plants?

A. The first gas plant with which I was connected was in connection with a gas regulation in Ashtabula, Ohio, in 1901. I was employed by the city attorney in that case to express an opinion as to the value of the plant and the cost of making gas there. I did not testify in that case because it was settled. The next case was one involving the properties of the South Boston Gas Company in the winter of 1904. There was an act of the legislature providing for the consolidation of the companies at a capitalization to be fixed by the gas commissioners, and there resulted
586 a hearing to determine the value of the properties. I did several weeks' work on the case, but through dissatisfaction with the act the commission did not proceed and I did not testify. Another case in which I was employed was between the city of Watertown, N. Y., and the local gas and electric companies. In that case I valued the property of the gas company after a very thorough examination of the plant and the drawings, also the electric plant. I worked on this case two or three months, spending a good deal of time on it. An-

other case was that involving the rate for gas and electric service in the village of Saratoga, N. Y., that came up a few months ago. In that case I was employed to value the gas properties, and had access to the properties and spent much time in going over and ascertaining their condition and giving testimony as to their value and condition before the New York state commission. Since that I have been employed in a case involving the value of gas property in Salem, Massachusetts. In that case I valued the plant and the property and produced figures relative to the cost of gas. That was last summer. Another instance in which I valued gas property was in a gas suit in Woonsocket. I examined the gas property and valued it to see whether the people were paying too much for gas and reported to the city officials. That was a case in court. The city of Fall River employed me with reference to the gas plant there; the main question there involved the question of the whole plant, and whether it was being operated in a proper manner. I was required to make a valuation of part of the plant and reported to the city as I was required, whether the plant was being
587 operated in a proper way; later on we came before the gas commission and I was employed by the city in that investigation, and that was closed a few weeks ago.

Cross-examination:

I moved to Worcester from Boston in 1904. I had lived in the vicinity of Boston probably ten years prior to that. I lived in Cambridge three or four years of that time. My business there was that of consulting engineer. I will not give the places where I was employed unless the court so directs; I don't care to tell you the name of customers for whom I have acted. While residing in Cambridge I was designing machinery for electric plants and gas plants. I haven't claimed to have designed any gas plants any time. I did not design any gas plants while I was living in Cambridge, and I don't claim to have designed any gas plants at any time, or to have constructed any and I never operated a gas plant. Prior to living in Boston in 1904 I lived for a few months in Troy, New York, where I was designing a line of electrical machines for a man in Troy. Prior to that I was employed by an electrical company in Massachusetts for a few months; I was there simply to and did design a line of electrical machinery—dynamos and meters which were to be used all over the country where the company could sell them. Prior to that I was in Indianapolis for two years designing electrical machinery and installing electrical plants. Prior to that I was in St. Paul, and my headquarters were in the establishment of the electrical company I was designing machinery for.

Q. What electrical company was that?

A. I decline to answer. Well, I will tell you I was em-
588 ployed by the Mather Electrical Company, manufacturers of electrical machinery. I was employed by them for about three years in the installing of electrical machinery, and prior to that by the Thompson-Houston company for two years in the same

capacity; prior to that I was with the Brush Electrical Company of Cleveland, for about a year testing electrical machinery. That takes me back to 1885. When I was in the electrical business I had gas works in mind. They were competitors of our people and I went around looking at them, but I did not take an active interest in them until 1900.

Q. Your active interest in the gas business has been against the companies?

A. It has been more than that; it has been to find out the truth. I have spent months that I wasn't in connection with any particular gas company or case and I spent it there studying the life of apparatus and the life and methods of gas companies. I gave you the result of my study this morning. I gave you my opinion and that opinion is the result of that study. I have been devoting a large part of my time to the study since 1900 and during the last 3 or 4 years I have devoted a still larger part of my time. I couldn't tell you just the amount of time. I devoted about all of my time to the gas business in 1907 in the cases I told you of and the Fall River case, beginning with my investigation in Fall River and ending in Boston a few weeks ago, when the case was tried. My investigation of that case covered about one year, but I wasn't employed all the time. I put in approximately two or three months of solid work. I put in at least three weeks of 1907 on the Woonsocket case, and also worked on the Salem case in 1907, for over a month of solid time. They had a trial in that case and I attended
the trial about seven or eight days. The Salem, Fall River
589 and Woonsocket were all gas plants. I think I also investigated an electric plant in 1907 at Saratoga Springs and put in more than two weeks. The electric proposition was comparatively simple. They didn't manufacture electricity, they bought it and they made their own gas and had an extensive plant in doing it. At the Fall River plant I made a careful computation in a report as to what it would cost to make certain changes in the distribution system in my opinion; I suppose it was more of an estimate of the value of new property. I did not attempt to value the old plant; there was no occasion for it. I have not attempted to value the property in this case. I came to Cedar Rapids Monday. I put in several days before I got here and have been busy since I came. I think I worked four days before I got here and there since, not including Sunday, which I threw in. I could not have the heart to charge the city anything for working on Sunday.

Q. Did you place your estimate on any particular brick buildings of plaintiff?

A. No. I based it on my knowledge of brick buildings in general. In the case of a well built and properly cared for brick building I have figured a life of 80 years and 20 per cent of the new cost will still remain in the building, in the possibility of using parts of the building and the foundations for other structures on the property and in the sale of the old materials. The brick and foundation stones and the trusses could be used after 80 years. The steel trusses would be good for old scrap and are worth

from $15.00 to $20.00 per ton. I can't tell the amount that would be allowed for trusses in these brick buildings; I have not figured these buildings at all and I can't tell just how much of the
590 residual value of 20 per cent. is made up of steel trusses. I don't know. I took the whole thing into consideration in figuring out that 20 per cent; just what each residual value will be in making it up I can't say. I did not figure up how many steel trusses are in any of those buildings. I assume the buildings are the ordinary brick buildings for gas works purposes, consisting of a stone foundation, brick walls, steel truss roof. I told you that I could not give you the residuals of each particular part of the building, but that it is my best judgment that you will have 20 per cent. of the cost left but I don't know how to divide it or what it will consist of. I have had no experience in taking down brick walls, but have talked with contractors who have done it and cleaned the brick, and I got my figures and made my estimate on that. These are not the same percentages that I used at Salem. I may have changed my figures some since I came to Cedar Rapids. I can't say what I figured the bricks were worth after they were cleaned. I think from 15 to 20 per cent. of the brick would be lost in taking down the wall, and I figure that the rest of the brick could be used again or sold for building purposes. If it cost more to take the brick down and clean them they would be of no value.

I figured the life of wooden buildings at 66 years, which is based on my observation. I don't recall any such buildings that have stood so long in a gas plant but know some about 60 years old in very good condition. The gas works in Boston was founded in 1823 and some of the original stuff is pretty old. I couldn't say whether they have any of the original buildings or not.

In my estimate I have given a life of eighty years to the gas holders, which is based on engineering judgment and ob-
591 servation of the life of such apparatus. I never saw a gas holder 80 years old and I don't know of any. By tanks and wells I take that to mean brick tar tanks or oil tanks, either one would come under the classification I have given it: that is all I know about it.

Q. What do you mean by wells?

A. I take that to mean brick tar wells probably and I assume the life of that to be 80 years. I think at the end of 80 years the thing would be in such bad condition it would need repairs, but you will still have the hole there and some of the brick construction, and it could be used. It is my opinion that the hole in the ground and the masonry in it would be of value.

I estimated the life of the gas benches at 40 years, which is based on observation and engineering judgment applied to the facts as found in observation. Coal gas benches consist of a brick arch in which are set clay vessels called retorts; they may be set horizontally or on an incline. I don't think it makes any difference as to life whether the benches are regenerative or recuperative benches. I did not observe which kind they have in Cedar Rapids. I will have to examine the benches further before I can answer that ques-

tion. I don't know sufficiently well how a recuperative bench is constructed sufficinetly well to describe it without drawings. In the yard connections I included the pipes under ground between the different parts of the gas plant pipes for carriage of gas from one part of the plant to the other and is intended to include the valves and specials, and I also figured that the great bulk of the pipe was cast iron. If it was all cast iron pipe, I would figure it at 100 years with 40 per cent, residual value on the new cost. I can't
392 tell what portion of the pipe I figured on as cast iron. In making my figures I took into consideration the Watertown plant. I had complete information there. Those mains had not been in very long because the plant was a pretty new plant, not in its present location over five years, and I don't know how long the mains had been in the ground, or what their condition was.

I think I also had in mind the yard connections at Saratoga Springs when I made my estimate on yard connections, but I don't know how long they had been in the ground. I also had in mind the Holyoke plant; I think they had been in the ground since 1849, I didn't see them put in. I have a book at the hotel that I can bring up that has all these things in it.

Q. What experience have you had in estimating the life of water gas sets?

A. Well, there was a water gas set at Saratoga Springs that had been used since 1897 to the best of my recollection, and they claimed it was as good as new; from the inspection of the water gas set here and the opinion of able gas engineers and from my knowledge of cast iron exposed to heat and all of these engineering factors, my judgment in making me believe it is what I have placed it. I heard Mr. A. C. Humphry in the Holyoke case. I don't remember any other now. I don't know how long they have been making water gas in this country or what is the oldest plant, but I think they made it prior to 1890. I give my opinion as to the time from what I have heard and read in the papers and other authority.

Q. You have never operated gas plants?

A. No. I don't recall any water gas apparatus now in
393 use that was in uses in 1895, but I know the life of a water gas set as well as any one could know it unless they set right by it. I know the nature of the thing. I never made any particular study of how a water gas set could be blown up, although I think it can be done. I don't know how to operate one, for I don't claim to be an operator of a water gas set. I could not operate a water gas set successfully. No; I don't know how to operate a water gas set. I don't claim to.

I have stated there would be 20 per cent. junk left of the water gas set which would consist largely of the iron and steel parts of the set. You could use the lining to build walls with. The 20 per cent. which I figured on is all in the iron and steel. I have not estimated anything for the brick lining. I am unable to tell you how much iron there is in one of these water gas sets and I haven't any estimate to give you. I don't know how many tons of iron there is in the one I saw at the works and I don't know how many

tons I figured on. I don't remember what price I figured on per ton. I see the price here from the Iron Age, which is an iron journal, giving the prices of scrap. I don't remember what figure I used.

Q. Did you use figures found in the Iron Age?

A. Approximately.

Q. Did you inquire the price of scrap iron in Cedar Rapids?

A. No, sir; and I do not pretend to know what it is in Cedar Rapids. I think I have sold a little in my career, but I never kept any record of it. But I would think the Iron Age quotation more reliable than any little thing I sold. I have never dis-
594 mantled a gas works or had anything to do with it, but I know something about what you could get it for, for scrap is scrap, and because it was used for making gas doesn't disqualify it from being sold. I do not know how long it would take to tear down this gas works, but you would have to tear them down before you could put up new; it is straight work to tear them down.

I put an estimate of thirty years on the boiler and stocks, based on my observation of the use of boilers and stocks and engineering judgment as to how long those materials will stand in operating. I don't know of any steel stock that has been up fifteen years, or any boiler that has been used 25 years, but I understand there are boilers in Danvers, Mass., that have been used 20 years, but I don't know how long they have been used from personal knowledge.

Q. Is there a distinction between high speed and low speed engines?

A. No, sir; there is no fixed line, the terms high and low speed are used but not with any significance.

Q. Where is the tar pump over in the gas works?

A. It depends on where you want to pump from. The tar runs into a tank and the hydraulic mains and you can pump it wherever you want it.

Q. Where is it pumped from?

A. I told you the best I know; I have given the best answer I could.

Q. Where else does it run from but the hydraulic mains?

A. You get some tar from your condenser of course and get some from the extractor perhaps.

595 Q. Did you ever see tar come from a condenser?

A. I don't know that I ever saw tar come from any particular piece of apparatus. The way tar gets into the condenser is the gas carries it in. I never saw gas carrying tar but that is my understanding that gas does carry tar into the condenser. My reading on gas works has been very wide but I think that I have heard that gas carries tar into the condenser.

I estimated the life of the purifiers at fifty years.

Q. Can't you answer these questions without your paper?

A. Well, I prefer not to do so. My estimate is based on my engineering judgment as to how those materials will stand under the conditions used. The purifier pipes at Salem were in very nice shape, though used since 1890 and looked as though they were good for many years. I also looked the purifiers over at Holyoke;

they were used 25 years, were cast iron three feet deep. I think that a modern kind of purifier. I think it is much better than the modern kind; those made of wrought iron they rot out quicker, that is my observation. As to design that is a question on which engineers would differ.

I figured a residual value of 20 per cent. on the purifiers. I did not figure the weight of these purifiers. I think they could be worked over into other purifiers and I took that into consideration in making my estimate to some extent. Assuming they could not be worked over I could not tell how much they would be worth as scrap. If the purifiers at the expiration of the term of service had only a scrap value they might sell that scrap value up to 20 per cent.

The market varies from time to time and in making an esti-
596 mate you have to do the best you can.

I did not get the prices for any of this scrap from any one at Cedar Rapids and did not particularly take the present prices for scrap.

Q. What is the use of lime in the purifiers?

A. It takes out the sulphur compounds more completely than iron will take it out. I have never operated a purifier. I know the life of a purifier from the experience of other people, not my experience in operating it, my experience in watching it. I have seen people shovel in oxide—that is the experience I have had, looking the thing over. I don't remember the figure that is given in all the standard books as to the proper rate of flow of gas through the purifier. What I know about it has been gotten from standard journals and text books and scientific men.

I figured a life of 100 years on the cast iron pipe with a residual value of 40 per cent. on the new cost which consists in the value of the pipe for relaying and for junk a good portion of the pipe dug will be suitable to relay again.

Q. What size pipe can you afford to dig up and relay?

A. All sizes, under some circumstances. I don't know what portion of the mains I figured on taking up and relaying or what portion you would sell for scrap. I assumed that the pipe taken up would be used somewhere else, enough of it to amount to 40 per cent. of its cost. When pipe is unfit to distribute gas through you don't find a mile of pipe that has to be taken up, but you find a spot here and there, and you could relay a good deal more
597 than half of the pipe and I figured on relaying half of it.

The percentage of gas leakage would be one indication of where the mains were worn out. In making my estimate of the pipe to be taken up I took into consideration the usual per cent. of two-inch pipe in the system. What the usual per cent. is I can't say. I can refer to the gas reports and tell you. By referring to the gas reports is the way I found out and by reading it in the engineering books and periodicals but what books I don't recollect now. I got the fact of the amount of pipe of different sizes of pipe that has been put into systems in this country out of reports of gas companies and different gas periodicals and gas books. I cannot tell the percentage without the books. I cannot tell what percentage

of 6-inch pipe I estimated without referring to the reports My opinion of percentage is based entirely on these reports I have read. The Massachusetts gas commission and New York gas commission reports, engineers' reports and journals. I excavated some gas mains and examined them three or four years ago in Boston and have seen it done at lots of other places, but I never superintended the stripping of any mains. I have read the engineering journals as to what it cost and I compare that with my judgment as an engineer based on all my reading, all my study, experience and everything I have got.

Q. Will you give us your judgment of the cost of stripping 100 feet of 4-inch mains laid 4 feet under cover and under asphalt paving?

A. I wouldn't give you any cost of doing engineering work. I don't claim to know what it costs to build a building of old pipe for you.

598 It is not customary to coat cast iron pipe for the purpose of preserving it in the gas business. I don't think half of the pipe would be relaid in 75 years, but in 100 years the system would be so covered with bad spots that you would want to relay it. The coating will not protect the pipe. In soil like you have here it all gives out at the same time.

I sink the paving entirely on the theory that the paving does not belong to the gas company; it is not their property and they are not entitled to have it valued. If they strip the mains for any purpose they have to take up the paving and relay it. I understand that is the usual practice, but is not necessarily a part of the cost of establishing the mains for I presume all your mains were laid before the paving.

In the service connections I include what the company owns of the service pipe. I don't know how much you have here. I took into consideration that you had service pipes here worth so much money. I don't recollect the practice of any gas engineer in the method employed of laying service pipe. I don't remember what method is used for connecting service pipes with the mains in any particular place.

Q. What experience have you had in laying service mains?

A. I never laid any service mains myself, and never had any laid under my supervision for the purpose of carrying gas. I have had a great many pipes laid under my direction but not for the purpose of carrying gas.

I estimated the life of meters at 40 years and the same on meter services. This is based on my observation of the life of

599 such things and the records I am able to get at and the statements in gas engineering journals and books. I have had no experience with gas meters except as a looker on.

Q. Could a meter that was made 40 years ago receive the parts of the meters that are being built today.

A. I am unable to answer that positively. There is nothing to show that in 40 years from now the parts of meters cannot be used on meters then made.

My consulting as to gas plants has been mainly as to the value of property. My figures on the life of arc lamps are based on my reading about them, my looking at them and seeing of what they are made and their structure. I don't recollect that I have questioned any gas man about the life of gas arc lamps. We have electric arc lamps operated in a similar way. I think the arc lamp after it reaches a certain stage of use, where you can consider it a poor unit, you can have it fixed up and make another lamp out of it and the new one has a considerable value.

I arrived at the depreciation of the small pipe at the yards as a matter of engineering judgment.

Oxide is a cheaper material than lime and it does not make possibly so perfect a purification as the lime and when there are no requirements upon a gas company to make them turn out their gas with a certain purity the tendency is to put more oxide in, but where there is a regulation as in Massachusetts they put in half oxide and half lime and purify it to remove the sulphur. That is not the only office but it is part of the office.

I said that my recollection was that they had one or two boilers at Danvers that were installed in 1887 or 1888. I was there
600 a few months ago and looked up the age of it, and that was why I had that particular instance in mind.

Edward W. Bemis.

The defendants then produced the above named witness, EDWARD W. BEMIS, who being sworn, testified as follows on direct examination:

I reside at Cleveland, Ohio; am superintendent of the water works at that place, and have been since 1901. I am 47 years of age. After graduating from Johns Hopkins University in 1885, I was engaged in college work in Vanderbilt and Chicago University and State College of Kansas, and in economic investigations until 1899. During that time I made studies of municipal gas works in the United States and visited many of those plants and some private plants. I had served in two or three gas cases; had been employed by the state of Illinois to prepare a report on the gas, electric light and street railway franchises of Chicago. I was at a trial of the Des Moines gas case, two different periods, and in Indianapolis, where I was employed by the city and by the city of New York in connection with an attempt to secure a lower price for gas. In 1899 I went to New York City and lived there two years and devoted myself to a special study of public service corporations, and during that time was employed by the cities of Haverhill and Springfield, Mass., in an appearance before the gas commission with reference to the price of gas in those cities. I was before the U. S. Department of Labor several months in 1900. I was sent to investigate in Great Britain and while there visited and got in touch with a dozen of the larger gas companies there. In 1901 I came to Cleve-
601 land. I have been employed in connection with several gas cases since then—by the city of Boston in a gas case that

lasted several months in 1904 and 1905; also by New York off and on for the last two years, the equivalent of six months full time, in an investigation of the Consolidated Gas case. I was there within the last three or four weeks; also by cities of Buffalo, Montreal, Chicago and Saginaw, in important gas cases. I have been devoting some time in the last three years in work as a member of the committee on municipal ownership for the Union Federation. I was one of the committee of five that directed the investigation here and in Great Britain and then prepared the final report. That took us to many of the leading gas companies in Great Britain and a few in this country. It has been a very extensive investigation in which we employed many experts, in the different departments of accounting and service.

I have heard testimony and have consulted the different gas engineers with regard to the theory and question of depreciation of gas works.

In 1890 I published a monograph of 150 pages on municipal gas works in the United States and in 1900 edited a book, writing one-third of it, entitled, "Municipal Monopolies." I have made a special study in connection with the cases I have been in, of the question of manufacture and distribution of gas and have become familiar with the costs entering into the manufacture and distribution of gas. Also in connection with a very new report of the Massachusetts gas commission, that I have been allowed to consult in their office and also the frequent reports and cases in which I have been engaged, and my study has given me a knowledge of what depreciation is in a works of this kind.

602 I have read the report K-2 and the interrogatories and answers filed in this case and the inventory by Mr. Pratt, and know that the works manufacture the gas that is supplied to the consumers living at Kenwood Park and Marion. I have noticed the table on "K-2" showing the average cost of gas for five years at Cedar Rapids to be 64.04.

Q. What have you to say as to whether those figures are reasonable or unreasonable.

Objected to by plaintiff as incompetent, irrelevant and immaterial and calling for an improper and immaterial method of getting at the price of gas, and because the witness is not a practical gas man or engineer, but his knowledge is wholly theoretical, and the witness is not competent to testify as to the cost of gas. This objection is to apply to all questions asked this witness as to cost of gas. Objection overruled.

A. Taking the operating expense as given by Mr. Hall for five years at 64.04c., then to that I add an allowance for bad debts if there is no discount for prompt payment. I take that at .08c. because such were the losses from bad debts of the Peoples Gas Company in Cleveland in 1905, from that source, and they did not have any discount for bad debts or prompt payment and that is the latest information I have. The Cleveland gas and coke company, which is the larger of the two gas companies, has likewise no discount for

prompt payment and their losses are about the same. The allowance for insurance and claims I have given it .93c., that being the experience of all the Massachusetts companies for the last three years as computed from the returns of 60 companies with an aver-
603 age sale of about 20 per cent. more than here. This allowance is perhaps unnecessary in this case as the last five years show no expenditures on this account. The allowance for bad debts and insurance would make 1.73c., which, added to Mr. Hall's 64.05c. would give a gross possible cost under the new ordinance of 65.77c.

Then there are certain deductions that I have made, saving on office expenses of at least 2c. or $2,000.00; saving on leakage of a possible 2c.; savings on depreciation and repairs on manufacturing plant used for the making of gas for Marion ½c., and a reasonable profit—on gas that is sold to Marion at say 20c. a thousand c. f., which would amount to about $1,000.00 on the sales which I understand this year are five million feet, which profit distributed over the sales in Cedar Rapids would be about 1c., or a total deduction of 4.5c.; this from the gross cost would leave the net cost 61.27c. or a net return upon the capital at the 90c. ordinance rate of 28.73c., and that on the sales of 91,331,000 c. f. in Cedar Rapids in 1906 would be $26,239.40, which would leave for possible dividends $22,489.40, after paying interest. On the other hand 28.73c. profit if applied to the 105 million feet of approximate sales for 1907 would amount to $30,166.50, and after deducting interest on $75,000 of bonds would leave $26,416.00 as a possible dividends on capital stock.

Plaintiff moves to strike out the statements of the witness as being incompetent and immaterial, the matters given in regard to the year 1907 being speculative and assuming a state of facts not proven. Testimony taken subject to objection.

I spoke of an allowance of .8c. for bad debts upon the assumption that the company would not give any discount. I have to
604 deal in the water department of Cleveland with 70,000 consumers and about one million dollars a year receipts. There is no discount for prompt payment, though we have a right to exact a deposit and shut off the fater for failure to pay, and our losses are scarcely nothing. The difficulties would be greater with gas but I know the People's Gas Company lose less than 1c. and they give no discount but have a deposit from their customers, which on their business is about $26,000.00 or about 6c. per thousand feet, and I think their losses are about .8c. That figure in my opinion would compensate the plaintiff for any loss in the change of method of collecting from the discount basis.

Insurance and claims are grouped together and I have found that .93c. has been the entire expense of all Massachusetts companies grouped together, during the last three years. With reference to, office expense as shown by Mr. Hall's report, I think that the expense in office of $600 a month could be cut down to about $400, or about 2c. per M. c. f.

The leakage as shown by Mr. Hall's report is in my opinion high. The leakage in nine Massachusetts companies nearest to this size,

for the year ending June 30, 1906, which is the last year for which we have any published reports, was 5.76c. The leakage here is 255,000 per mile of mains, while there it is 168,000. The reasons for the leakage here are high pressure and small mains, which may seem to render high pressure necessary at some places to get gas at all into other places. As an illustration, the 2-inch mains amount to 61,725 feet or 29 per cent. of the total mains, and the amount given for 3-inch mains was 58,950 feet or 20 per cent. of the total. These figures were taken from a lead pencil memorandum handed
605 to me, not an exhibit in this case. I find from the answer to the interrogatories filed in this case that exclusive of Marion the pipe of 2 and 3 inch amount to 129,125 feet or 60 per cent. of the total of 214,875 feet. Now I take thirteen of the Massachusetts companies with sales between sixty-five and two hundred million feet during 1905 and 1906, and find their per cent. of pipe less than 4-inch as given by the twenty-second annual report of the gas commission, is only .4126 per cent. of the total, and excluding the companies of Brockton and Waltham it is only .384 per cent. This company as compared with those and other companies with whose cases I have been connected is very large, and with such a proportion of small pipe it is natural to expect a tendency to high pressure in order to get the gas through the pipes at all and the consequence of such a method as that would be to have a large leakage; on the other hand the mains themselves might be in poor condition. The leakage is about double what it is in the companies I have mentioned in Massachusetts and the cases I have studied in Great Britain.

On Mr. Hall's report there is given 12.71c. as the average repairs, installation of new stoves and free work and the depreciation during the last five years. About half of that is connected with the manufacturing plant or 6c. per M. c. f. Now since the gas sent to Marion is about one-tenth of the total it would be about ½c. per M. c. f. for that item. It seems to me the portion of the plant devoted to furnishing gas to Marion, should so far as depreciation and repairs go, be apportioned to Marion gas according to the amount sent there and that is true also in respect to officers' salaries, and should have been included in my typewritten statement, but that should be included, such portion as the gas sent to Marion is of the whole.
606 I think that the figures given by Mr. Hall, of 12.71c. as an average for repairs, renewals, promotion and depreciation for five years is certainly a reasonable figure and base my opinion on my acquaintance with other companies and the amount that should be set aside to cover depreciation of the plant.

Q. What have you to say with reference to the amount that should be set aside for depreciation of a plant of this size.

A. I have prepared two tables to be compared with 5.67c. which is given on page 19 of Hall's report; this is addition to repairs and for services and promotion which makes up the balance of 12.71c. 7.04c. is a normal allowance for repairs and promotion, being 6c. for repairs and 1c. for promotion and on the whole combined I have prepared a couple of tables, and I have prepared a statement with

reference to the necessary yearly additions to the 4 per cent. sinking fund to meet the depreciation of a plant of this kind. Exhibit "P-2" is the table which I have prepared; also prepared a table on the requirements of a short life based on testimony of Mr. Pratt, which has been marked Q-2. I first determined the amount of property subject to depreciation after taking out the land and working capital as in Exhibit 19, as $335,469.91. Paving is given in Exhibit 19 at $43,580.00, that not being owned by the company, I do not consider subject to depreciation. I also deduct $6,500.00 value of buildings on the Annex and not used for gas purposes; also $4,000.00 of high pressure main to Marion; the value of that main is given as over $5,000.00, but this end nearest Cedar Rapids is used to reinforce the pressure in some districts here, therefore, I only allow for the portion beyond that. I think that three-fourth-
607 of the total high pressure main is outside Cedar Rapids. Then there are 3,811 meters and the fittings have been valued at $2.00 each, but were paid for by the consumer, therefore there is no depreciation on the fittings, that means $7,622.00, and making these deductions from Mr. Pratt's figures we get a total of $237,677.00, and my table is based on this value. In preparing my table, I took into account the three great items of depreciation, physical decay, inadequacy and obsolescence of the plant. The latter two items are quite as important in the case of some parts of the manufacturing plant and in case of small mains as the wear and tear, but in case of large mains and apparatus does not count much. Meters are matter of physical decay rather than inadequacy. There was good deal of chance for obsolescence in purifiers, retorts, boilers and that class of apparatus some years ago but there has not been much progress in the art in the last ten years and gas engineers do not look for any large progress in water gas apparatus in the next ten years, but as a whole I took into consideration very largely inadequacy and obsolescence in determining my depreciation. The soil here is good for the long life of mains.

The type of apparatus here, is as up to date as is usually found in plants of this size. There has been a large development of inadequacy in the street mains, but that has all occurred in the past and is not something that the consumer should pay for in the future. I have been through plaintiff's works and find that there is much more evidence of physical decay than there is of obsolescence or deterioration. The new holder is rusted badly and when it was painted over the rust. There were twenty leak holes in it that I observed the other day in walking over it, and I don't think it has
608 been properly cared for is the reason for those holes, if it had been, you would not have found leak holes in it. There is rust under the last coat of paint and very much of it is in bad condition in that respect. The walls of some of the buildings show considerable cracking.

I arrived at my conclusion by taking the mains with a life of 75 years which is reasonable for mains of four inch and up and turned to the sinking fund table to find what amount it was necessary to put into a 4 per cent sinking fund yearly to equal the princi-

pal at the end of seventy-five years, it is only, 22 or one per cent on the principal or $164.33 and I figured the other items in the same way, giving the buildings, holders and yard connections a life of 30 years. Then the balance of the property including all machinery at the works, all meters and services I valued at twenty years' life and that requires 3.35 per cent. a year or $2,291.60.

The total necessary to set aside in a year is $4,139.38 which is .0174 of the property subject to depreciation. Then looking back in the sinking fund table I find where 1.74 per cent. is equivalent to 30½ years average life. In most eastern companies that is taken as an average life. Mr. Humphrey president of Steven's Institute and who frequently testifies in gas cases used it in Holyoke and I consider him quite an authority upon the life of gas plants.

At the bottom of "P-2" I show how much this depreciation sinking fund would be per M. c. f. of gas sold, which would be 4.78c. on last year or 3.94c. on an assumed sale of 105 millions for 1907. If I had stuck to 1906 I should have excluded the new water gas set of $14,000.00. In my opinion the figure of 4.53c. per M. c. f.

609 is a reasonable amount to be set aside for depreciation in this plant and I base this opinion on my observation and study of the life of the various portions of gas plants and of boilers, pumps, buildings, mains and services in water works, and the lives of the other machinery which I have been familiar with in a great many plants and 30 years for the buildings, holder and yard connections and 20 for the rest of the property is a very conservative figure. But I wanted to be on a very conservative side where there was such growth as there has been here and where inadequacy might play a larger part than in most of the cities where I have had occasion to know the life of the plants. Where the money is not put into a sinking fund, but back into the plant, which I believe more burdensome to the consumer, the figure of 4.53c. plus 6c. or 7.04c. for repairs and stoves given by Mr. Hall is confirmed by the only case I know where the complete record has been kept for twenty years, which is the Consolidated Gas Co. of New York, where the figure for both renewals and repairs was only 6c. per M. c. f. sold, but it is fair to state that for a part of the time 20 per cent of the gas was bought and the repairs and renewals were only on the manufacture of 4-5 and the distribution of the rest, but if we cut off the 1-5 the average is 12c. in New York and the testimony of the company's witnesses say the plant was in better condition at the end of 1905 than in 1884 and Mr. Humphrey testified that repairs and renewals were somewhat higher in New York City than they would be in other places and was chief expert for the company. I also investigated these matters in Boston, Syracuse and Buffalo and they aided me in forming the conclusion reached in regard to my depreciation figure.

610 I have heard the engineers of Boston testify to their experience before the commissioners that the life of gas mains was practically perpetual, and I have found that in Cleveland 30 years is a short life for water works buildings and 20 years too

short for the machinery, it is 10 years for each longer they should have than I have given here.

Exhbit "Q-2" is to show how much would have to be set aside per M c. f. if the life were taken at a much less length that is 50 years for mains, 75 years for the residue of the property. It is not necessary to charge an increased rate to take care of the political, sociological and other hazards mentioned by the witness McClain. I think it is entirely proper for the company to adopt rules in the shape of turning off gas for failure to pay and also to require a deposit or guarantee as an inducement to prompt payment and I think the allowance of 8c. would cover all those items. I found no trouble in Cleveland where those rules have been adopted by both water and gas company and I have found no trouble elsewhere. In New York City there has never been a declaration for prompt payment, but a deposit is required of about 5c. per M c. f. and this has secured them against bad debts, they loosing less than 1c. a thousand. The deposit is held and the people get interest on it. I think if this rule was introduced in a place like Cedar Rapids that had not been accustomed to it, accompanied by a reduction of rates the friction would be reduced.

I have studied the question of electrolysis and heard a great deal of testimony in cases on that subject also had an electrolic survey made of all our mains. There was a little risk a few years ago, but since electric railways take more care there is very little ex-
611 cept near power houses and not very much there. The tendancy is for water mains to carry more electricity than gas mains, and assuming the railway parallel the gas and water mains, the injury to the gas mains by electrolysis would be neglect or ignorance.

The higher the pressure the greater would be the leakage. It also increases the flow of gas and diminishes its heating and lighting power and the gas bills increased. Water meters are all tested before we accept them, I have no personal knowledge as to gas station meters. Where a station meter is tested and found to be fast, in order to arrive at the proper amount of gas that had been metered I would assume the last test that is known as the starting point and then take the present state of the meter, and find the average between the two, that is for the progressive line run from the time when the meter was known to be correct to the present. If the meter started correct and at the end of two years was six per cent fast I would assume it was 3 per cent fast at the end of one year.

I know from meter men, that this is the ordinary way of testing meters. Assuming the correction made by plaintiff in this case I consider there is very poor management somewhere for there would be an abnormally poor production of gas per pound of coal carbonized. If the station meter was 4½ per cent. fast then the yield per pound of coal was only 4.56 feet per pound of coal carbonized, which is low, as 4.70 to 4.80 is common in coal gas plants and would indicate poor management or throw doubt upon the claim that the meter was too fast.

612 With reference to the conclusions of Mr. Hall as to the cost of gas at this plant as shown by the books, being reasonable, I would say that 5c. in Exhibit O-2 and P-2 in the line below the allowance for depreciation and repairs on the part of the manufacture of the plant used for Marion gas, is a little high so the two balance each other—so I would have the total of 61.27c. unchanged as my estimate of the reasonable cost of gas.

The general result of price reduction all over the country has been to increase the sales more rapidly than the increase of operating expenses or interest charges so that there is likely to be a larger margin of profit on future business for the next three years. Reduction of price stimulates consumption. Both the per capita consumption and the growth of sales last year indicate a prospect of still further increase for the next two years, especially with a reduction of the price.

Gas pipe is about $1.00 per ton higher than water pipe. I have found that of all the cast iron pipe in this city only 7 per cent was laid prior to 1896 and all of the 10, 12 and 16 inch has been laid since 1895, in other words all of the large sizes and as to the other two sizes I have found that of the 29,950 feet of 6 inch only 2,100 feet was laid prior to 1896 and of the 4 inch only 2,300 feet was laid prior to 1896. Giving an equal weight to each year, beginning with 1896, the average rates per ton of water pipe f. o. b. Cedar Rapids and ending Dec. 1905, was only $22.89 per ton, to which add 50c. for carting and $1.00 for the difference in cost of gas pipe, brings it up to $24.39 per ton as compared with $23.50 which was taken by Mr. Pratt in his valuation of water mains laid along the trench. I would say that the prices of water pipe in Chicago and Cleveland were 20 per cent less in 1901 and 1902 than in 1900 or 1903.

613 The only opportunity to study the effect that price reduction has had upon gas consumed is the experience of the last 22 years of the 60 Mass. companies which has been reported to the gas commission and I have found from much study of them, the universal tendency to great increase, of consumption with fall of prices. In the six largest companies outside of Boston the prices fell in a certain period 20 per cent. while the sales increased 30 per cent. in five years. While the assets increased 38, the profits fell from 10.25 per cent of the assets to 9.89 per cent. In Boston they reduce the price 15 per cent. and the sales increased 19 per cent. in two years, and as testified here by Mr. Cowdery these are ordinary results.

Exhibit R-2 are pages 386 and 387 of the 14th annual report of the commissioner of labor on water, gas and electric light plants. I have knowledge of the 12 plants therein spoken of. They are the McMillan syndicate and are located at Long Branch, N. J., Columbus, Jackson and Grand Rapids, Mich., Milwaukee, Madison, St. Paul, St. Louis, St. Joseph and Nebraska City. All the data there makes 43.22c. for the total cost, as the correct statement of these companies. The McMillan syndicate allowed for repairs and depreciation 8.9c. I have analyzed the figures of that report with this

result. Repairs 3.9c., and 5c. for depreciation both in the Mfg. and distribution system. I think to be fair that 3.9c. should be a little higher today on account of labor and material and it should be nearer 6c. today.

In my opinion the value of the land of plaintiff should be fixed at what it originally cost. The cheapest price at which available land could now be purchased. I believe it is safer to take the cost, for gas purpose it is not any more valuable than if it was sold
614 and it does not have a market value except as the gas plant is spread over it.

With reference to the annex, being included in capital, in all the cases I have been connected with, the companies have admitted that a building not used for the gas business should not be valued as gas capital neither the land or the 13 houses on it should be included in the capital because not used in the gas business.

The item of $25,000 working capital in Exhibit 46 is much higher than usual and for higher than the experience of this company shows is necessary. I think nothing should be allowed for working capital over and above the materials on hand as shown by Exhibit 46. I believe $2,500.00 additional to the supplies on hand as stated in Exhibit K-2 is fair for working capital and more than has been actually used.

There is no "good will," in a monopoly—people have to use their goods whether they want to or not, sometimes there is included an item called "going value," which is supposed to be a capitalization on the connection of consumers and is the result of canvassing and promotion which is always charged to operating expenses—so that I hold that going value should not be capitalized.

The fact that the rate is not fixed permanently, but may be changed on changed conditions renders fair and just a much lower rate at the time fixed.

Where the company was at an expense, in laying its mains originally under paving and only then, should it have a right to capitalize paving and repairs became somewhat more expensive on
615 account of paving, but that is a charge into expense of repairs and renewals and is not a part of capital account.

Cross-examination:

In my schedule of operating costs and of profits I started with the assumption of 64.04c. as given by Mr. Hall and that he had made a correct study of the books. My third assumption was that Hall had included, in the cost of gas all the things that he ought to include, as shown by the books of the company. I also assumed he did not exclude anything from the cost that ought not to have been excluded; I did not go over the books myself I only looked at his report, and so far as my estimate is concerned it is based, so far as the 64.4c., entirely on Mr. Hall's report which is Ex. K-2.

If it appears from the books of the company that he eliminated for the year 1906 the sum of $14,333.11 and eliminated from the cost of gas that amount of money, which ought to have been included then my estimate would be wrong, and if he eliminated for

the year 1905 $13,391.00 from the cost of gas that should have been included then my estimate for that year would be wrong.

By bad debts I mean losses by reason of consumers not paying promptly and nothing else. By claims I mean claims collected against the company for accidents or explosions or anything for which they have to pay damages. I include not quite one-half for claims—this is the experience in eastern companies which I am quoting which I take from return of the Mass. companies. In my estimate I include whatever they pay for insurance it may be liability insurance or it may be common fire. I don't know whether
616 I include anything for employers' liability or not. I took the experience and average of those Massachusetts reports.

Q. What do the Massachusetts companies include in insurance.

A. What they think proper, is all I can say. I don't know what they think proper to include. I don't know what they include, but I know what they call it.

Q. You don't know what you include in insurance do you.

A. No. I simply call it insurance.

I can't tell by the reports from the Mass. companies what they do include and I didn't pretend to find out. I got the 8c. for bad debts from the Peoples' Gas & Electric Light Company of Cleveland. I saw the audit of that book. The water company there does not have any discount for prompt payment. If they do not pay at a certain time we turn off the water and we require advance payment each month equal to the expected use of water in all cases and under our system we get the money before it is due. Our bills are payable twice a year and we collect six months in advance, and that is a constant deposit, on an estimate of the amount of water they will use. The Cleveland Gas Company collects monthly, but not in advance. I think it is, likely they have the city laid off in districts and have collectors. I saw an audit of that company about nine months ago. Their entire losses were about $26,000 not all on account of bills for gas, it probably included other losses. I don't know of any city the size of Cedar Rapids, where the gas or electric company does not give a discount for prompt payment, but know of two or three of the large cities that do not. According to
617 Brown's directory, Chicago Gas Light Company gives a discount for prompt payment. If the company had been giving a 10c. discount and then cut off that practice and are not allowed to require an advance deposit then it might be that 8c. would not cover their losses, but there would not need to be a large increase and if plaintiff could not require a deposit I would add enough to make that item 7c. instead of 8c.

I have never had any experience in the matter of running a plant either water, gas or electric in a city the size of Cedar Rapids, and know nothing about it from personal experience, I only know from what I have learned from the managers. I have not studied the problem much as to whether it would be good business judgment to give a discount in town like Cedar Rapids or not, except that I believe small cities would have less loss than a large one, that is all I can

say, and without any personal knowledge of the need of a discount in cities the size of Cedar Rapids.

Q. Do you claim to be a gas expert?

A. An expert on gas statistical science.

Q. A gas expert witness isn't that what you mean?

A. No. I am more of a statistician.

In my estimate I have a deduction of 2c. per M c. f., on account of reduction that should be made in the office force. I took Mr. Hall's statement about that. During 1906 I spent about 90 days on the gas case in New York, and in 1907 about one month in the case in Buffalo, two months in the New York case, three weeks in Syracuse case, ten days in the Saginaw case and perhaps a month in the
618 Cedar Rapids case. I am superintendant of the water works. I have charge of the plant when I am there, but I have tried to divide the departments so that if I am not there it will answer. There is nothing for me to do all the time, but I have thought this work more important to the cities and I have arranged with the administration to be away. I wouldn't be allowed to go away if it wasn't of service to the city. I have not studied the duties of any of the officers of the plaintiff or what any of the employés of the company do, except as indicated in the evidence. I think $200 a month ought to cover the salary of the manager of a gas plant like plaintiff's. I know the office expense instead of being 10c. as it is here is often 5c. I don't know any company in Iowa whose office expense does not exceed 5c. I haven't an opportunity to know the business of any other company besides this one. Newton, Mass., has a population of 36,000 office expense is nearly 7c.; Brockton has office expense of 4.43c. price of gas $1.25; Lynn has price of 89c.; Chickopee has price of $1.32; Fayetteburg $1.46; Gloucester $1.20; Haverhill price $1.01. I don't know what the duties of the officers of the companies in these several cities are, they vary in the different cities very much.

The office force amounts in Cedar Rapids according to Mr. Hall's report to about $600.00 a month. I think the work could be done for $400.00. I think the manager could perform the office of president. I would cut down the president's salary to $150.00 a month and the rest of the office force enough to make about two cents (2c.) a thousand. I believe about $40.00 a month could be saved on the clerical force. I don't know where, not exactly, just where it would come, would have to be determined. The basis of my figuring that there ought to be a reduction of $50.00 a month in the office
619 force of clerks is because I remember that some companies get along on 5c. and I thought that this ought to do so. I don't know how many ledger accounts one clerk can keep. I have not approached it from that basis. In the water works plant at Cleveland I put the matter of the number of accounts that each clerk should keep in the hands of the chief auditor. I don't need to know, how many accounts each clerk should keep.

Q. As a matter of fairness with this company, don't you think, that when you do not know what your own men are doing, in your office, you ought to allow Mr. Averill to say what his should do.

A. I don't think that the same should follow. Mr. Hall said he would take the contract to do this office work for $200.00 a month aside from the manager, is one of my reasons for taking 2c. per M c. f. off from the office force.

In my memorandum I took out of the cost of gas 1c. per M on account of leakage, but I think it is too low. I based my opinion of excessive leakage on Mr. Hall's report and of the meter being fast. I took that into consideration or I would have given 2.5c. because if the station meter was not at all fast there should not have been evidence of more than half the leakage there was. I attribute the leakage to inadequate mains and too high pressure. I examined the holder and found at least a score of white markings which your works manager agreed with me were evidences of leakage. There were any quantity of white markings there and I didn't care to touch a match to them. I think that openings are generally considered evidence of leakage and then I talked to your works
620 manager and he confirmed it and I didn't bother further with it. I never made a specialty of detecting leaks in holders and don't know how gas men detect them. I know the holder is in bad shape.

Last night I was at Mr. Good's house and astonished at the pressure there. I would judge it was four or five inches.

The pressure in other cities than Cedar Rapids varies. It will run from two inches to eight with a good many companies. As I recalled it I found it at the works of plaintiff from 4 to 5 inches but my principle reason for thinking as I do of the pressure was what I saw on the gas light in Mr. Good's home.

I don't know how I would distribute the work in the office to cut down expense, as I said yesterday I have not worked that out. I was actuated chiefly by such accountants as Mr. Hall who said he would take the job and make the reduction. I knew Mr. Hall in his figures did not take anything out of office expense. When I arranged my exhibit I hadn't any other town in mind.

I was at the works, saw the new holder and the white spots on it which I concluded were leaks and asked the foreman what they were.

Q. How did you arrive at what should be the proper percentage of leakage?

A. That was based upon a very extended study of the leakage in a number of places I had to do with and from the figures given in nine Massachusetts companies, the figures of which I got from the Massachusetts reports. Leakage is unaccounted for gas—it may be in condensation in the mains and services. I don't know what the percentage of leakage is throughout the whole state of
621 Massachusetts I never computed it. The normal leakage used to be considered by good gas engineers to be from 7 to 12 per cent, but now they are lower, it is now running from 2 to 10 per cent in good companies. I think the leakage is high here. The leakage per mile of mains is the best way to approach these cities and the leakage per mile of mains is but 250,000 and the leakage of the Boston Company was about 150,000 per mile of mains. They have larger mains which gives a greater surface of

joints for leakage. The proportion of small mains here is much in excess of Massachusetts. *When* sometimes figure leakage when *the* figure on the miles of main, on the basis of a three inch main. About 14 out of 60 towns of Massachusetts has a greater per cent of leakage than Cedar Rapids according to the Massachusetts reports, and in this comparison I am assuming that Cedar Rapids has 11 per cent of leakage for the five years. In making up the table in my estimate I used nine per cent of leakage which I explained and which I said was too high—I still think it is—I don't think the leakage should exceed seven per cent, which is a fair allowance in this town. In my estimate I took an average of leakage for five years, as given by Mr. Hall, which was about 11 per cent. If the evidence shows that the leakage in Cedar Rapids is only 8 per cent for the five years then I would have to revise my figures. The reduction to seven would be one-sixth off from the 5.15c. It would be about ¾ per cent of seven per cent in the reduction of the cost. When I originally made out my estimate I had in my mind that your meters were 4½ per cent too fast. I reasoned that it could not be true for the whole five years, for if it was you were getting too little gas out of your coal and if it was true then
622 it is not likely it was when it was put in—if a subsequent reading of the meter showed that it was 4½ per cent when it was put in, it is not so now. My statement is that it is not reasonable that a meter that is 4½ per cent fast now was 4½ per cent fast when installed, because it is to be presumed the company used ordinary business judgment when it buys a meter. The way meters usually do is to gradually get to running faster—it is either fast or slow—it is a gradual process usually.

Q. Explain how it is a gradual process?

A. My experience has been more extensive in water meters probably than any other man in the United States.

Q. But answer the question on the basis of a gas station meter.

A. I have heard engineers say that *that* those things are gradual in their experience, but I have not had the experience of operating them.

Q. Do you know about the operation of a gas station meter.

A. I do not, but I have seen them taken apart but I could not describe the mechanism.

Q. How do they regulate the station meter as to running slow or fast.

A. I never attempted to do that.

Q. Do you know how?

A. No.

I don't know as a matter of fact, whether it is possible for a station meter to gradually get faster or slower, but I think it is the probable method, that's all. I do not know how a gas meter
623 is tested, or how it is regulated inside, and when I assumed that this meter had gradually got faster during the two years I had no positive knowledge whether such a thing was possible or not. I have heard the water mark on a station meter referred to, but I am not personally acquainted with it. I do not claim to know

a thing about the internal mechanism of the gas meter. The meter might have a jump if it did not get fast gradually.

Q. Suppose the meter was fast when it was put in.

A. That would be a possible explanation of course if the meter was fast when it was bought, then it registered more gas than was in the holder until corrected. And if the meter was running 4.5 per cent. fast during the last half of 1905 and all of 1906, that would cut down the average of leakage considerable.

I think the reinforcing of the pressure of the Cedar Rapids system by the high pressure pipe, where it is connected in before it goes out to Marion of course, increases the pressure of a portion of the city, by putting more gas into the mains. The maximum pressure in Cedar Rapids on the distribution system runs up to 5 inches which is very high, it is over four inches in many places. Mr. Adams will give you that later, plenty of it.

Q. Explain how the high pressure main increases the pressure—in what way.

A. It does not communicate its own pressure, but gives more gas to the holder pressure system and thereby increases the pressure. If a main is so small that it does not give adequate supply of gas in a district and it is reinforced by a feeder so as to give that supply at the mains it increases the pressure to give
624 at supply. The high pressure is connected with the other mains by means of a high pressure pipe and a governor. I am not sure just how the governor works, but I understand that each one allows a certain pressure of gas on the other side of it.

Q. Doesn't the governor give the company an opportunity to supply the small mains without putting on the heavy pressure?

A. Certainly it avoids the high pressure at the works.

I don't think that the high pressure main is the main course of the leakage, that is for the whole city, the main cause is in the small sizes of the mains and the high pressure carried generally through the system.

I said yesterday that I had observed the yields of coal gas here as being very small on the assumption that you had throughout 1906 produced 4½ per cent less gas than your original record showed, that is, if your meter had been 4½ per cent fast it would reduce your production of gas per pound of coal from 4.77 to 4.56 feet. I am not basing this statement upon any personal knowledge of the operation of a gas plant. I am basing that on the facts of companies that I know of—it runs from 4.7 to 4.8 per pound of coal. The low yield may be accounted for in the leaky benches or leaky retorts, but that again seems impossible in view of the fact that they were renewed—it could be accounted for in a poorly managed plant.

Q. In making up your judgment as to what the leakage ought to be you took one set of cities in Massachusetts and in making your estimate of office expenses you took another.

625 A. I didn't take any set of towns -or office expense. I quoted a certain set of towns -or office expense, in reply to

your question, and quoted certain other towns with reference to leakage.

In the town of Malden, Mass., which appears on pages 128 and 129 of the report the gas made was 229 million, gas sold 181 millions, gas used at works 2,180,000 which would leave 42 millions for leakage or 18.64 per cent—though the report says 12.33.

I don't think that more than one-tenth of the unaccounted for gas is due to condensation, take the year around, based upon my talks with engineers as to the amount that this gas is taken up again in warm weather this is destroyed.

Q. What factors did you take into consideration in arriving at your table of depreciation?

A. There are two or three items. The value of the various portions of the plant, their probable years of life, and the amount necessary to put into a sinking fund at 4 per cent to pay out that value at the end of the life. The value of the plant assumed by me is given in Exhibit "P-2" as relates only to Mr. Pratt's exhibit of depreciation $237,677.00 if it excludes the land and working capital and the small tools. I understand Mr. Pratt's Exhibit 19 to be on the present value of the property, he didn't make it very clear himself, and I also understand him to indicate that it wasn't very different from the cost, but in the case of the old holder now used for tar and oil tank he had made a reduction. I think that he intended that his valuation should be a replacement valuation; he didn't take the cost of pipe, but put in the present cost of digging through
626 the paving and pretty near the present price of iron, so that I would judge that it was intended to be duplication value with a very little written off for some old property.

To duplicate the mains at the present time I would lay them in the alleys where there is no paving at the present time, that is the way I would do as things are today in Cedar Rapids. It is an assumption contrary to the fact to say that you could not lay the mains in the alleys, but would have to lay them in paved streets. I can't tell the number of feet of mains in the paved streets that are parallelled by alleys, I only know by a very extensive observation. You could also lay the mains in the parking between the curbing and the sidewalk on each side of many of the streets, most cities do lay it there, the New York Gas Company did their five hundred miles and the city of Cleveland. If you laid the mains in the parking you would have to lay it on both sides of the street or you could lay it with services. I did not take that into consideration in arriving at my depreciation. I didn't take into consideration that the paving would have to be taken up and relayed, but assuming that the pipes were reproduced in their present condition and location then you would have to take into consideration the repaving assuming that in order to get at the present value, it would be necessary to relay the mains in their present location and take up the paving and relay it then the paving should be taken into consideration. If you have to replace the mains in their present location now, after the paving have been laid at the city's expense of course then there

is the cost of cutting through that paving and that would add to the replacement value.

Q. That cost of taking up and relaying the paving should be figured in with the cost of the mains.

627 A. In fixing the price of gas it should be ignored. Possibly for the purpose of sale it should be figured in. These are two different legal principles. In determining the duplication value it would be necessary to take the removing and relaying of the paving into consideration—that is as far as I can go. In making up my estimate I did not take that into consideration it should be ignored. I ignored all paving. In fact, I believe all relaying would be in the alleys. I eliminated from Mr. Pratt's table of depreciation $4,000 which I considered the value of the high pressure mains to Marion. That is not the value of all the high pressure system, but of that portion going to Marion. I said that the high pressure main from Cedar Rapids to Marion cost about $5,400.00. I intended to include the value of that high pressure pipe in the Cedar Rapids system so far as it is used to reinforce the Cedar Rapids plant, but so far as it was used in order to go to Marion, I excluded it. I considered and assumed that about $1,400.00 of the value of that high pressure pipe belonged to the Cedar Rapids plant. I haven't the number of miles of mains that would include.

I understand that the entire high pressure mains from Cedar Rapids to Marion that is given here $5,423.00, 23,700 feet, and I thought about 70 per cent of it was due to Marion and the rest was a Cedar Rapids matter. I took out of the value of the high pressure mains, $4,000 for the part of the high pressure mains that extended beyond the city limits as being the cost of the high pressure main from Cedar Rapids to Marion.

I understand that the pipe from Cedar Rapids to Marion cost about $5,500.00. I understand that to be the meaning of Mr. Pratt's exhibit.

I don't understand the operation of a governor burner.

628 I don't know whether the pressure at Mr. Good's house could be regulated by that or not.

Q. You have based your estimate of depreciation upon the experience of the New York Co.

A. Slightly. I have been governed by studying a great deal of the business for the last ten years of that company. That is one of the companies I gave figures from yesterday. They were 10.6c per M c. f. for repairs with a sinking fund paid back into the plant 10.6c. per M c. f. of the sales for 21 years ending 1905 or about 12c. for the 17 years ending with 1901 in order to cut off a later period when they bought some of their gas. The sales in New York per mile of mains were very large. I think the sales in New York were 13,270,000 in 1906, or 17,000,000 per mile of mains which would be about seven times that of Cedar Rapids.

Q. On that bases the depreciation and repair fund in New York would be seven times as large as it is in Cedar Rapids.

A. It is difficult to operate because of the large repairs in New York, the congestion of population and condition of labor.

The amount allowed for depreciation and repairs in New York is seven times as much per mile of mains as it is in Cedar Rapids if you figure it per mile of mains, which is not a fair method. They are installing new services not less than eight inches in size and laying under paving with an enormous congestion and large expenditures.

Q. You have said you would not take paving into consideration.

629 A. But in repairs you should. There has been depreciation in New York on account of having to- small *of* mains originally. There is greater depreciation on small mains than on large ones from inadequacy. That is especially true in places just starting in the gas business, the first 20 years has a very great depreciation from inadequacy and obsolescence. The two and three inch mains in this place are largely made of wrought iron. There would be greater depreciation on the mains in New York than in Cedar Rapids, but on the boilers, benches, holders and machinery and plant it would be about the same. The only difference between New York and Cedar Rapids so far as repairs and depreciation are concerned is the extra cost in making repairs on the mains and services.

Q. What did you allow in your depreciation for inadequacy?

A. I lumped the whole in together, inadequacy, obsolescence and physical life—I didn't try to separate them. It is very difficult to do so, but I think it could be done. For the mains I would say the physical life is two hundred years, there is no evidence of their ever wearing out in soil of this kind. We know of water pipe in use 30 and 40 years and apparently is in as good condition as new. I figured that seventy years was a reasonable life for mains, 30 years for buildings and yard connections and 20 years for the rest of the works. When I figured 70 years I estimated that some of the pipe would have to be taken out and larger substituted and that it would be put in the repair part of this plant.

Q. Would any of it be rela*y*ed.

A. Some of it would be scrap when taken out. I didn't

630 make any estimate as to how much would be scrap when it was taken out, but say pipe will last 75 years.

Q. You assume that part that would not be scrap would be taken care of by repairs.

A. Certainly. I am not referring to the 2 or 3 inch pipe put in years ago, but to the ordinary cast iron 4, 6 and 8 inch mains.

Q. When I made up my estimate on depreciation I assumed that each size of pipe was laid in relation to the others so as to make up what would be a good engineering service.

A. Yes sir, absolutely so. I don't think, that with less than 57 per cent of the pipe over three inches you could arrange them properly in *the* this town so they would be adequate for which they are used.

Q. Is that based on any experience of your own.

A. No sir; not on the operation of gas works—it is based purely on my experience and knowledge of the proportions of such mains

in cities elsewhere, chiefly Massachusetts companies, because we have the exact data in the reports, of the size of their mains for the whole 60 companies. I found that in the Massachusetts reports. I found one error in these reports this morning. I allowed, in my estimate a profit on the gas sold at Marion of 20 cents per M. c. f. and in addition to that I allowed depreciation on the plant because of that gas sold to Marion. I allowed ½c. per M. c. f. for that.

Q. What do you take from the cost of manufacture in Cedar Rapids on account of depreciation by reason of gas sent to Marion—well figure it out and talk afterwards you needn't think out loud all the time.

631 A. About 1-3c. instead of 1c. which would be about seven cents a thousand on small gas sent to Marion for 5 million feet. I have allowed 7c. here in Cedar Rapids also for repairs and depreciation.

Q. Then you want to deduct on account of the gas sent to Marion a certain number of cents for depreciation and a certain number of cents on account of profit. I think it is right that we should take depreciation and profit both. The company could easily get a profit of 20c. per M. from Marion. I testified in this case that the larger the amount of gas manufactured the cheaper it can be manufactured, but the company wouldn't be likely to manufacture gas and sell it to Marion at cost price, but it could well afford to do it at 20c. a thousand and cover the cost of depreciation.

Q. You think the company should earn at least 20c. profit.

A. No sire. But the reason why I say the company should get more profit from the Marion people than from Cedar Rapids consumers was because I thought it best to drive the best bargain possible.

Assuming that the price at Marion has to come down when it comes down in Cedar Rapids. I think probably I would want to change my figures and cut out the ½c. for depreciation entirely and make my deduction from Hall's cost, 4c. instead of 4½c.

I still think the 5c. per M. c. f. is a proper allowance for depreciation in Cedar Rapids. I wish to add to the valuation upon which I figured depreciation the sum of $6,500.00 on account of the buildings on the annex which were not included in Mr.

632 Pratt's Exhibit 19, though I suppose it was. I also made a mistake on the amount that should be taken from the value of the high pressure main going to Marion. These two items together would make a difference of $124.50 and on the basis of Exhibit "Q-2" it would be $142.10 a year.

There is nothing very definite in the Massachusetts reports with reference to depreciation, but there is a statute in that state with reference to it, which requires that a certain per cent. on the value of the plant be set aside each year to take care of depreciation which is not to exceed three per cent. excluding the land.

I testified in the Des Moines case in 1895.

Q. You have not operated a gas plant since that time.

A. No sir. I have not been employed by any gas companies in operating their gas plants. This last year was the first year that I

was away from the water company in Cleveland half of my time, before that I was home four-fifths of my time.

In the figure of 7.04 used in my schedule for repairs I have included I believe 7c. for promotion and 6c. for repairs and making a total of 12.7c. that Mr. Hall figures in all. I did not assume Mr. Hall's figures on promotion, for I didn't find any very clear statement on that. I took the same total as he has for repairs and promotion, but didn't attempt to separate it into the items, but I think he said one-seventh was sufficient for promotion and 6c. was for repairs. That would make approximately $1,000.00 for promotion during the year 1906 in Cedar Rapids and about $1,050.00 for the year 1907.

My table of depreciation is based upon the placing of
633 the money, in a savings bank at a certain rate of interest as a reserve fund or it may go back into the plant—it can be put anywhere where it will bring in four per cent. I said yesterday that it was based on a sinking fund that would be laid aside in a bank, but it would be the same thing if it was put anywhere else. If it was placed away in a savings bank you would have to borrow capital to put into the plant or extensions, or get it paid in by the stockholders, and borrow at a higher rate than the sinking fund. I know of no company that is carrying such a reserve fund. I know some private companies that do that, but they use the sinking fund principle just the same and put it in the business, it is simply a matter of bookkeeping and the better way to do it I think. When this company put the money that it figured off for depreciation back into the plant, I think it was the proper thing to do. I have no criticism on that particular action of the company, it was the right thing to do, it doesn't alter the burden. The burden is on the consumers for they have to replace the plant as it wears out. If the investment is furnished by the gas consumer I don't think they should pay on it, at least nothing like the rate that should be paid if the investment is paid by the stockholders.

Redirect examination:

I stated on cross examination that I had no criticism of the way this company has used its depreciation, but I criticise the amount that was charged off. If the stockholders are paying for extensions out of their earnings in addition to declaring dividends right along on their stock, they are entitled to a far lower rate on that stock than if it represented contributions directly out of their own
634 pockets. I did not mean that if the demand on the gas company should double with reference to the quantity of gas thereby requiring a double investment, that they should be paid off out of depreciation or earnings from the consumers, but that this money should be furnished by the stock holders or bond holders.

On cross examination I said that I had seen an audit of the Cleveland Gas Company. The New York Audit Company made the audit and it was left with me pending negotiations to purchase the plant by the city. I kept some of the comparative costs and among them this one, "Bad debts 8-10 per cent." That is how I happened

to know about the audit. The water works, at Cleveland is a municipal plant, the gas is owned by a private company. The advance deposit required by the Cleveland Gas Company would amount to about $1.50 or $2.00 per consumer.

It is the extension of the mains over a wide territory—the number of miles of mains that the gas goes through that determines the leakage, it is not a question of whether the gas flowing slowly or swiftly—the pressure is pressing it against the pipes and of course it is escaping if there are any openings and so a fair way is to take the leakage per mile of mains and that is what I did when I said the leakage per mile of mains is $250,000 here and $150,000 in these nineteen Mass. companies. I stated in my cross examination that the companies in New York City and in Cleveland are laying the mains in the parking. It has been done in those places without any injury to shrubbery on my street; the trees are as vigorous as they were before, and from my observation I would say that the other streets are in the same way. The congested char-ter of
635 the streets in New York and the difficulty of doing work there makes it very costly. I have had personal experience with buildings, boilers and engines that were constantly in the water works working day and night the year around. In the 60 years' experience of the plant the buildings have lasted over thirty years and the boilers have lasted over twenty years.

Q. I will call your attention to the following sentence on page 53 of the twenty-second annual report of the Massachusetts gas commission. "Prior to the beginning of each fiscal year the manager of the plant shall furnish to the mayor and select men of the municipal light board to make an estimate of the income from the sales of gas and electricity during the ensuing year and of the expense of the plant during said year meaning the gross expense of operation, maintenance and repairs, interest on bonds, an amount of depreciation equal to three per cent. of the cost of the plant exclusive of land and water used in the operating burden thereof, or such smaller or larger amount as the board may approve the requirement of the sinking fund."

A. I talked with members of the board on that subject and they thought it a fair amount as to electric light, but too high for gas except where they had bought the plant of private parties and paid too high a price, and they expected before long to reduce this three per cent. in cases where the cities had written off a good share of this excessive price above structural value, in other words that three per cent. not only allowed for actual depreciation, but allowed what the cities had paid under the Massachusetts law for the capitalization of the plant. The Mass. Gas Commission have never allowed anything for paving in replacement value, increased value of land,
636 good will, franchise or going value, simply with regard to the value of the physical assets based on their cost less depreciation. From an examination of the map Ex. 34 on which the red lines represent the high pressure mains I believe that more than ten per cent. of the gas consumers in the city receive additional pressure through or from the high pressure mains.

The consumption per meter in this city did not apparently grow nor did it decline in the last three years, but in other cities where there has been a reduction as much as 20c. or thereabouts per M. c. f. there has come a great increase in the use of gas per meter. This is the basis of my opinion with reference to the increase growth in Cedar Rapids continuing.

Exhibit R-2 purports to be the number of feet of mains laid by plaintiff and their sizes since 1876 by years. It shows that all the larger sizes such as 16 inch and 10 inch have been laid since 1897 and all but 7 per cent. of the 6 inch cast iron mains have been laid since 1895, but that 30 per cent. of the 2 and 3 inch mains which are wrought iron, were laid prior to 1896. This was compiled from Exhibit "A" of the amendment to the petition. The word "unknown" in the left hand corner of the exhibit means that the size and the year in which it was laid are unknown.

I have taken the cast iron pipe and found how much less it would have cost if instead of its being valued at $32.50 along side of the trench, as Mr. Pratt did in making his appraisal, it had been valued at the price of water pipe f. o. b. Cedar Rapids plus one dollar for the difference between that and gas pipe, plus 50c. for cartage. The only doubt remaining is whether I shall use the same weight
637 per foot for the same size pipe. I do not find any estimate of the weight he used, so I take the weights given among gas companies namely, for 4 inch pipe 19.2 per foot, 6 inch 29.2 pounds, 10 inch 36.2 pounds, 12 inch 70.8 pounds and 16 inch 108.3 pounds. The weights some years ago were a little higher than these, from 10 to 15 per cent., but on these weights just given the cost of these mains, for the iron in them simply would have been $4,818 less than by using the $32.50 price as did Mr. Pratt. On very much heavier pipe the difference would have been $4,000.00. So the difference is from $4,000 to $5,000 according to the weight you use.

Q. That is new pipe?

A. Yes sir. This does not go back beyond the time we had quotations from the water works—that is prior to 1896—probably before that pipe was also cheaper than $32.50. Chicago quotations were very much cheaper during the years that pipe were being laid here, there were two years 1901 and 1902 when quotations in Cedar Rapids could not be found and I took Chicago quotations.

Defendant offers "B-2."

My statement with reference to the increase or decrease of meter sales contains no original evidence. In this case it is simply a compilation from the evidence of Mr. Hall and the amount of pipe in each year is simply a compilation from the pleadings in this case.

The defendants now offer in evidence Exhibits "O-2," "P-2," "Q-2"and "R-2" which are objected to for the reason that the witness assumed a set of figures taken from other estimates and the witness has not qualified in this case as an expert gas engineer or a

practical gas man, but testifies that he is a mere statistician
638 and that the sources of his information are gathered from reports which are not shown to be correct and which are incompetent and hearsay. Evidence taken subject to the objection.

The following are the respective exhibits towit:

EXHIBIT "O-2."

Operating Cost and Profits.

Operating expense for five years as per Hall		64.04
Add—Allowance for bad debts if no discount	0.80c.	
Allowance for insurance and claims	0.93c.	
Total additions		1.73
Gross cost		65.77
Less savings on office at least	2. c.	
Less saving on leakage at least	1. c.	
Less saving on depreciation and repairs on part of m'f'g plant used for Marion gas	0.5 c.	
Reasonable profit on said gas at 20c. per 1000 ft. sold to Marion on $1,000, distributed over sales in Cedar Rapids	1. c.	
Total deductions		4.50
Net cost		61.27
Profit on 91,331,000 ft. at 28.73c		$26,239.40
Profit on 105,000,000 ft. at 28.73c		30,166.50

Profit on $26,239.40 equals $3,750.00, interest on $75,000 bonds, plus $22,489.40 dividends.

Profit of $30,166.50 equals $3,750.00 interest, plus $26,416.00 dividends.

639 "EXHIBIT P-2."

Necessary Yearly Additions to a Four Per Cent. Sinking Fund to Meet Depreciation.

The amount subject to depreciation is the appraisal of Col. Pratt, less the paving, and less the value of the setting of 3,811 meters at $2 each, which was paid for by the consumer.

Description.	Col. Pratt's appraisal.	Years of life.	Yearly % required.	Amount.
Mains	78,695.00	75	0.22	$173.13
Buildings, Holders & Yard Connections	94,576.00	30	1.78	1,683.45
Rest of Property	74,906.00	20	3.35	2,509.35
Total and Average	248,177.00	30.2	1.76	4,365.93

$4,365.95— 91,331,000—4.78c per M. ft.
$4,365.95—105,000,000—4.16c per M. ft.

Mr. Hall's allowance 5.67c

"EXHIBIT Q-2."

Requirements for a Shorter Life.

Description.	Col. Pratt's appraisal.	Years of life.	Yearly % required.	Amt.
Mains	78,695.00	50	.66	519.39
Buildings, Holders and Yard Connections	94,576.00	30	1.78	1,683.45
Rest of Property	68,406.00	15	4.99	3,737.81
Total and Average	248,177.00	25	2.40	5,940.65

5,580.90— 91,331,000—6.50c per M. ft.
5,580.90—105,000,000—5.66c per M. ft.

Mr. Hall's allowance 5.67c

640 EXHIBIT R-2.

Feet of Mains Laid by the Cedar Rapids Gas Light Co. in Each Year.

Year.	W. I. 2 in.	W. I. 3 in.	C. I. 4 in.	W. I. 4 in.	W. I. 6 in.	C. I. 6 in.	C. I. 10 in.	
1877	.....	3,700	1,200	300	....	.....	....	5,200
1883	3,700	.....	.....	.....	....	.....	....	3,700
1884	4,200	1,800	.....	.....	....	800	....	6,800
1885	.....	.....	.....	3,550	....	.....	....	3,550
1886	5,950	1,000	.....	.....	....	.....	....	6,950
1888	350	.....	.....	.....	....	.....	....	350
1890	1,800	3,000	.....	.....	....	.....	....	4,800
1892	.....	2,300	.....	.....	800	900	....	4,000
1893	.....	900	.....	.....	....	.....	....	900
1894	800	.....	.....	.....	....	.....	....	800
1895	2,950	4,000	1,100	1,350	....	400	....	9,800
	19,750	16,500	2,300	5,200	800	2,100	....	46,050
1896	4,900	3,250	2,800	800	....	1,150	....	12,900
1897	.....	4,800	.....	.....	....	4,550	....	9,350
1898	.....	9,850	700	.....	....	.....	2,650	13,000
1899	.....	5,900	200	.....	....	750	....	6,850
1900	200	3,100	2,050	1,700	800	4,700	3,900	16,450
1901	450	1,100	2,800	.....	....	2,200	....	*10,500
1902	5,050	650	500	.....	....	4,400	....	10,600
1903	5,800	5,250	.....	400	....	700	....	**12,700
1904	14,200	.....	800	3,400	....	.....	....	18,400
1905	6,500	2,100	4,400	7,100	....	1,700	....	21,800
1906	4,875	6,450	2,700	5,300	....	.....	....	27,725
1906	.....	8,400 H. P.	....	.....	....	.....	....	.....
Unknown	.....	.....	.....	.....	....	7,700	....	7,700
	61,725	67,350	19,050	23,900	1,600	29,950	6,550	214,625

* This total includes 3950 cubic feet 12 inch C. I. pipe.
** This total includes 550 feet 16 inch C. I. pipe.

Percentage of Mains Laid Prior to 1896.

2 inch wrought iron	32. %
3 inch wrought iron	28. %
4 inch cast iron	12.07%
4 inch wrought iron	21.76%
6 inch wrought iron	50. %
6 inch cast iron	7.01%
Total	21.73%

Allan MacDuff.

The defendants then produced the above named witness, Allan MacDuff who being sworn testified on direct examination as follows: follows:

641 I am a member of the Board of Supervisors of Linn County, have been such officer since January 1907, prior to that time I was general foreman of the Rock Island machine shops and was so employed for twenty years. They were formerly the B. C. R. & N. Ry. shops. The tubular boilers in the shops were installed in 1876. They are in good condition at the present time and are still being used. The boiler is doing heavier duty now than it was when first installed, as to its performing that duty as economically now as when it was first installed, there is no difference.

We have a slow speed engine at the shops that was installed the same time as the boiler and it is still in use and has been used continuously all those years and is rendering heavier duty now than when first installed and as economical.

There are two boilers of 75 H. P. each and the engine is 100 H. P. I have been a mechanic for a good many years since 1862 and have had to do with engines and boilers and with the care of them. With reference to the wear and tear on a slow speed engine I would not think there was any difference between the life of an 8 H. P. engine and the size we have in the shop.

Cross-examination:

I was foreman of the shops for 25 years, as general foreman 20 years. The boilers and engines I speak of are run night and day. I had charge of these engines and boilers after I became general foreman.

642 The engines did not work up to *its* full capacity all the time, there was nearly a year that they worked about 75 per cent. of their capacity. The engines were generally overhauled and rebuilt once, about three years ago. The load was the same night and day when they were used. There was a time when for two or three years the engine was worked night and day the rest of the time it worked days. The boilers were also repaired, but the expense about them has been very small, the flues have been renewed not over three or four times along about every five years. The pressure under which the boilers were run was ninety pounds, they are supposed to maintain that pressure. There are other engines up there, one was imported from Rock Island and I would judge it is 25 or 30 years old. I do not know whether it was rebuilt or not. The boilers at the shop are not brick set boilers, but are of the locomotive type. The engines were designed to carry 100 to 150 pounds pressure.

M. J. ELY being sworn testified on direct examination as follows: I reside in Cedar Rapids have resided there since 1891 I am classed as a machinist at the Rock Island shops. I am a consumer of gas in this city. The burner handed me has been used at my house 1401 N. 6th street west. I cleaned this lamp twenty days ago and I had a lot of black stuff deposit. I don't know what it was. I am personally acquainted with the city plumber McHugh and I asked him. That stuff has collected in there from the 23rd to the 30th of November of this year. The black substance handed to me looks like some material that I took out of this lamp. I regulated the flow of gas into this lamp by the adjuster, I moved that to get a regular flow as near as I could. I would change it several times. I would start to light the lamp and the pressure was so great that it would blow the match out of your fingers pretty nearly. This is a black inverted lamp.

643

THOMAS SUCHOMEL recalled.

John Mead is the employé of the plaintiff who has charge of the street mains and the governors on the high pressure mains. I look after the station governor only unless I am called out, which I have been once or twice this spring and on the west side of "E" avenue west and near the end of the high pressure main. That governor is set for three inches of water pressure, I set it and had a gauge on it then. There is no recording gauge on any of the governors. Sometimes the governor will stick and if it sticks open it might allow a greater pressure than three inches. I can tell by the gauge at the works about what the pressure is at that point on the west side.

The charts I have in my hand are for the first part of December. I have only one of the charts for November the others were destroyed. I always destroy them after the first of the month. I have not materially increased or decreased the pressure at the works during the past forty days. I never change the pressure, we have been carrying the same pressure as now since June 1907 and prior to then the pressure was a trifle higher than it is now, that is, there was more pressure, we carried at noon 5½ inches, but the governor was set to make a differential pressure—I mean the pressure during the greatest consumption was greatest in order to get the pressure to the lowest points and we decreased after noon and increased at 6 o' clock. We have carried the same pressure for about two years. We increased the pressure on the demand of the consumers when they kicked for higher pressure, and we commenced to decrease the pressure about the time we began to lay the high pressure mains. That increased the pressure on the low pressure mains near the works and then when we got it out on the districts of the town we could cut it down on the high pressure mains and that materially reduced the pressure given to the low pressure mains. Prior to June 1st we carried from 5 to 5½ pounds of pressure, and after that we carried five. I think we commenced to carry the 5½ pounds of pressure in the summer of 1906. I believe we did not carry the pressure in 1905 that we did in 1906.

644

The high pressure mains had not been installed and were not in use in June 1906, they were first used in the fall of 1906, the one on the west side being completed first. I could not say how much or when we increased the pressure prior to 1906, we tried to keep it just as the people wanted it. Just as the people demanded the pressure as the mains were brought out farther away from the works and the pressure got inadequate we kept increasing it, and I can't tell when we changed from 28 tenths to 40 tenths except that it was in 1906. I don't make any record of the pressure charts.

The new holder at the works was painted two years ago by Loftus Brothers. They took a steel brush and went over it and scraped it and scaled it and painted it with a brush.

Q. Are there any leaks in that holder now?

A. No sir; not to my knowledge.

Q. What are the white spots on the holder?

A. What white spots.

Q. Are there not a number of white spots on it?

645 A. It is sparrow feathers and shit most of it. I didn't notice them white spots until Mr. Adams spoke about it and then I examined to see what they were. Some is bird shit and some is feathers that stick to the paint on the holder, the holder goes down in the water and the sparrows set on there and drink and the feathers stick to the holder when it comes up. There are no gas leaks in the holder.

As the consumption calls for more gas the valve of the governor opens and that makes more pressure and as the holder gets above a certain distance it shuts itself off.

CLARENCE McHUGH, recalled, being sworn on behalf of plaintiff testified as follows on direct examination.

I am plumbing inspector and meter inspector for Cedar Rapids. I have a method in my office by which I test the pressure of gas, and have charts which I take off. The nine charts show at what point they were taken. They were taken on a recording gauge. The city got the guage about the 1st of February last I think, somewhere along there and it has been in the office of the city plumbing inspector since then only occasionally it was taken out to test at some other place. I also have a gas testing meter machine in my office which was purchased last March. It is manufactured by the Maryland Meter Company.

Alton D. Adams.

Recalled by defendants testified on direct examination as follows:

646 The object of the chart X-2 is to show the prices of iron pipe in certain localities from 1883 to 1904. By using the chart, can be readily told the prices of iron pipe for any year, covered by the chart and it purports to show the prices of iron pipe in dollars per ton in three localities corresponding to the three irregular lines running across. The northerly of these lines purports to show the prices at northerly points and one of them is prices per ton at the

Ohio river, and the heavy unbroken line purports to show the prices of cast iron pipe at Chicago in dollars per ton. This and another chart is a copy of figures and comments represented in the engineering news of 1904 on page 544. The engineering news is regarded by engineers generally as being authority on structual prices and engineering. (The defendant now offers in evidence the chart just identified and testified of by the witness and marked Exhibit X-2, which is objected to as incompetent, irrelevant and immaterial. Taken subject to objection.

EXHIBIT "X-2."

This exhibit attempts to show the fluctuation of prices of pipe for the years stated by witness, and it is not necessary to set it out herein.

I have had occasion to investigate the question of gas pressure, at the works and in the mains. During somewhat more than a year I have devoted a good deal of time to the investigation of pressure conditions as far as revealed in the records of the Massachusetts Gas Commission and the engineering publications that pertain to gas and books on gas engineering and besides that made a lengthy
647 investigation for Fall River as to pressure and assisted in a case just completed before the Gas Commissioners, the main point being that the gas pressure delivered in the houses should be less than it was at the time that the investigation was made. I am also familiar with the standard works and authors on that question. I have visited the gas works of plaintiff and while there got one chart from the pressure gauge. Charts are sometimes left on the gauge 24 hours and sometimes 48 hours; they consider that a better way to get the operation of the gauge pressure. I am able to tell what pressure it has recorded. This gauge is not for any pressure, it is simply set to record whatever pressure occurs. It appears from the chart that the pressure varies greatly.

Q. Why is gas sent into the mains at the works under a pressure?

A. It required a pressure to move the gas from the works. There is a drop in pressure all the way along from the works to the meter in the house. The leakage from a system of gas mains depends principally upon the factors, the physical condition of the mains, in other words their badness or goodness and of the joints of course barring any direct loss from the mains it depends on the goodness of the mains, pipes, joints etc., that is one factor—letting that be understood—then the amount of leakage will depend on the amount of pressure that the gas is sent through the mains. The load of gas in the mains is the amount of gas moving through the mains, other conditions being the same and the leakage varies according to the square foot of the pressure applied in the main.

The way that mains are connected up into a building affects the pressure at the burner. Take the open burner which burns
648 with an open flat flame, the economical use of the gas as used in these burners depends on the pressure at which the gas is made to issue from the burner.

In Massachusetts the minimum candle power is fixed by the state, but it is also specified that that candle power shall be produced by five cubic feet of gas per hour. There would be no use in fixing the candle power without some provision for fixing that a certain amount of gas should produce that power. In order to have the gas burn to a high efficiency you must have the flame raised because the high temperature is necessary to develop incandescence of the carbon particles at the flame—so the higher you can get your flame the more incandescent. You may drop the flame 25 per cent. in temperature and the light giving power or light giving capacity of the flame drops much faster than the temperature. It is shown to be a fact and the books so state, that if you draw into the flame or allow gas to issue from the open burner at too excessive a pressure, at much more than 5 or 7 tenths of an inch, as I have stated more air than is necessary for combustion of the gas will be drawn in and mixed with the product of the gas that is being called out and thus reducing the flame temperature and it reduces the temperature of the light-giving particles of carbon; it reduces the luminous area of the flame. If you will notice the flame of an open burner carefully you will find it to consist of an inner and outer surface of light; if you raise the temperature decidedly at the edge where the gas issues from the burner you will find a small non-luminous area down near the burner, a black looking area. Those are the reasons why the high pressure 6 or 7 tenths of an inch reduces the efficiency
649 of the open flame burner as you increase the pressure the flow of gas increases equal to the square of that pressure, but if you bring gas to a burner at a much higher rate than is necessary to operate it efficiently the gas passes through much more rapidly than necessary, but the candle power does not increase with that increase in pressure; it may even diminish. I have seen many flames issuing from the burner say with a pressure much more than 5 cubic feet that did not burn nearly as bright as if it was burning at the proper pressure.

The incandescent burner has a variety of forms, the upright and inverted. Higher pressure is given and higher efficiency than with open flame burners is possible with the incandescent with out leading to great waste of gas; but with such pressure as is shown by the charts of this town there is bound to be in the ordinary course of operation great waste of gas at the ordinary incandescent burners because the pressure is far above what is necessary to operate them. The gas stoves will also operate efficiently with far less pressure than this exhibited on the charts running up to 3, 4 and 5 inches and the pressure applied to gas stove burners as well as when applied to incandescent burners for lighting purposes usually result in great waste of gas, because of the gas issuing with out combining properly with the air, a great deal of gas is drawn into the flame and lowers its temperature and lowers its power to impart heat to the different articles it comes in contact with.

I have examined the charts from the works and have studied the pressure indicated at which the gas is sent into the mains of the system. These charts taken from the gauge at the works indicate

that gas is being sent into the distributing system at such
650 a pressure that the economical use of gas, if they are taking gas out of the mains without governors, is impossible at that pressure on the pipes. I would like to see the charts of pressure taken outside the works before I testify to them. The charts shown to me indicate a very high pressure, namely 5 inches and more particularly all the day, and a variable pressure at the works. The one from the works now before me, drops down to 2.6 inches and raises to 5.2 inches. There are two periods of high pressure on the chart; one extends from about 6 a. m. to about 12:30 p. m., corresponding I suppose roughly to the period during which there is considerable demand for gas in the stoves; another period of high pressure running up to 5.4 inches, at its maximum begins at 5 p. m. and extends around about 10 p. m. That period is when there is most demand for lighting. I have a chart from the city hall on the date of December 12, 1907, on that chart there is a period of high pressure running from 4.2 inches to 4.8 inches and extending from about 6 o'clock a. m. to about 10:30 p. m. Another period in the afternoon extending from one to four, is nearly as high, then dropping to 2.6 for about an hour; then another period of high pressure from 6:15 to about 12:45 the next morning, that last period the pressure being from 4.4 to 4.6 inches of water. I would say that this pressure exhibited on the City Hall chart, and the other charts, seem- to exhibit similar pressure, up nearly to 5 inches. Those pressures make it absolutely impossible, taking the open burner, and incandescent burners in use, to get efficient use from the gas, and such pressure in the pipes and at the burners and gas stoves must result in great waste of gas to the consumer in that he will not get the heat and light out of the gas that he ought and will have to pay for, as registered by his meter. The
651 way I account for the increase of pressure from 28 tenths to 40 tenths as testified to by the foreman, is because the output here is increasing very rapidly. The sales have increased five times in a period of ten years of annual output. That increased sales of gas must have been gotten through the mains one way or another. My judgment is that it was the increased pressure that created the increase in the output of gas, and forced it through the mains. I have had occasion to investigate pressure in regard to its bearing on the economical use of gas, and as to the method of controlling pressure. I was employed by the city of Fall River to investigate and report on the conditions there at that system recently before the gas commission in which the city sought to have the pressure at which gas was furnished to consumers regulated. There I ascertained the pressure of the gas at various recording gauges applied to different parts of the city. My attention being directed to the matter in the Fall River case, I made an extended investigation for the purpose of controlling the pressure of gas so that it could be delivered to the consumer with proper efficiency.

If the pipes in Cedar Rapids are not large enough to carry the gas and deliver it at a reasonable pressure in the houses, additional pipes may be laid to operate in conjunction with these, or these pipes may

be replaced with larger. The high pressure may be regulated at the works to 28 hundredths of an inch, as the foreman testified yesterday. Such governors might be introduced extensively throughout the system so as to cut the service pipes up into comparatively small sections, each supplied with one or more governors, the supplementary mains running to these governors, and a preferable method is to use an individual governor at the meter of each consumer, the
652 governor being installed and taken care of by the company as they do the meter.

That governor will give the consumer a uniform pressure of gas and enable the company to go on with the pressure they have started on and get a uniform pressure at the burners of the consumers. That method was adopted at Grand Rapids for the reason that the system got to a point where they either had to put in new mains or these governors, and they run up the pressure two or from $2.00 to $3.00, and I estimate the cost of installing three times above what it ought to be. The first cost for an ordinary governor for 3, 5 or 10 lights, would vary and all fittings at about $1.00.

An increase of elevation as you go from the gas works will tend to increase the pressure at the more elevated points; the increase will depend upon the specific gravity of the gas and with ordinary gas there will be an increase of one-tenth of an inch for every ten or fifteen feet of elevation in the pipe.

Q. What is the effect of burning impure gas?

A. When gas is extremely dirty and foul as it is here in Cedar Rapids, as was shown by the mantel and globe shown here yesterday and you attempt to burn it in special mantel burners, it rapidly fills up the mantel and cuts down its lighting quality and tends to break it down, and also the gas being more heavily charged with sulphur compound and ammonia if it is used you get products that will attack the gas fixtures, books, lace curtains and also affects the breathing apparatus of animals and human beings. Lace curtains will not, turn yellow and drop to pieces.

653 I have examined the lamp produced by Mr. Ely. Assuming that the sediment appearing in it occurred in seven days I would say that the gas was extremely dirty and illy purified.

I made an examination of the white spots which the witness said were bird droppings and feathers on the holder, yesterday. I went to the holder and examined it as well as I could. I don't claim to be an expert chemist and am not sure of what the white spots were, but from what I have seen around gas works and from the odor of the white spots, I think it is a deposit due to the coal, a deposit as the gas escapes, and I think it is napthaline. I took the samples which I have herein court, from the holder. I got it along the seams, that was the only place I found it, where the iron was riveted together and around where this was deposited there were white looking places for quite a distance; as for this being bird droppings—a considerable of it was under the opening when I scraped away the paint.

Gas should be delivered into the mains of the consumers at a pressure of not more than from one to one and a half inches for the ordinary burners; for incandescent burners and gas stoves 1.5 inches.

Of course that is about three times as great a pressure as necessary for the plain, open flat burner, but on the other hand it is a less amount than carried for incandescent burners; incandescent burners and gas stoves will operate nicely with .12 of an inch and will operate nicely with .15, but where there is this device some rule must be taken into consideration. You can install some pressure in the mains to apply generally. My best judgment is that .15 inches delivered on the customers' side of the meter is the proper and economical on the whole for the consumer to use.

654 The increase in pressure would account for the increase in the bills. The consumer might check the waste partially by looking carefully after his burners, and trying to adjust them to the varying pressures, but if the pressure was uniform and at the place indicated on these charts 4 or 5 inches, the consumer could not with the ordinary burners use it economically and the variation from 1 to 2 inches that enters into the pressure makes it still more impossible to get economical results. If the gas bills of the consumers in Cedar Rapids dating back to about where Mr. Suchomal said the pressure was changed has greatly increased, there is nothing that I can think of that would increase the bills but the pressure. The hissing or sissing sound from a burner when open is simply the high velocity with which gas issues from the opening; with low velocity you do not get the noise and with high velocity you get it and with high velocity you get a very high pressure.

I made two series of tests on a burner which I have with me, over at the city hall, using the testing meter of the plumbing inspector. I took a new lava tip which I found in the office of the inspector, and I had a man hold the watch while I made the observation on the instrument and at the flame. At first I put on the tip and turned on the burner so that it stood full capacity, and took five observations of one minute each on the rate at which the gas was passing through the tip. The meter is so arranged that you can read the number of cubic feet of gas consumed. The first observation gave consumption of 14 cubic feet, the second 14.2, the third 14.1, the fourth 14.4, and the fifth 14.2 per hour. This was the type of tip commonly spoken of as consuming five feet per hour. If it

655 had been operated at a proper pressure it would not have consumed over five feet per hour. The flow of gas through the burner would increase with the square root of the pressure. If you made the pressure four times as great it would double the flow from the burner. These tests ended 11.56 a. m. and the burner was blowing hard, so you could hear it all through the tests several feet away, and the flame was irregular in outline. The beginning of the second test was at about noon, and with the same lava tip, and at the same place. Instead of turning the gas on full, I turned the flame down until the flame reached its most luminous condition, looking at it by my eyes. The first observation the rate was 8.1, second 8.2, third 8.1, fourth 8.1, and fifth 8.1 cubic feet per hour. In this case so much gas was passing through that little meter that we didn't have so much friction following through the meter and the chart was still 4.4 on the recording gauge. The small U. gauge of

the meter was subjected to such a pressure that it showed 3.5 to 3.7 inches, instead of 2.4 inches when it was passing 14 feet per hour. The end of this test was 12:10 m. The burner was hissing but not making so much noise as in the first test. Assuming that the meter I used was one per cent. slow, that would have the effect to increase about 1 per cent. the rate at which the gas passed through.

Exhibit "B-2" is a schedule of the tests made. (Defendant offers in evidence "B-2" which is objected to for the reason that it is incompetent and immaterial and because it is not shown that the witness had a correct instrument, with which to make the test. Taken subject to objection.)

656 EXHIBIT "B-3."

Burner Tests at City Hall, Cedar Rapids, Iowa, December 13, 1907.

By Alton D. Adams.

Beginning of test at about 11:33 a. m., by watch, and 11:43 a. m. by chart. Test on lava tip obtained *form* gas company.

No. of observation.	Cu. ft. per hour with burner tap full on.
1	14.0
2	14.2
3	14.1
4	14.1
5	14.2

Water pressure on U guage about 2.4 inches during tests.
Pressure on recording *ug*age about 4.4 inches.
End of test at about 11:56 a. m. by the watch.
Burner blew hard during the test.
Beginning of test at 12 noon by the watch, and about 11:50 by chart. Test on the same lava tip as above.

No. of observation.	Cu. ft. per hour with burner tap at point of greatest illumination.
1	8.1
2	8.1
3	8.0
4	8.1
5	8.1

Water pressure on U gauge 3.5 to 3.7 inches during tests.
657 Pressure on recording gauge about 4.4 inches.
End of test at about 12:12 p. m. by the watch.
Burner hissing during the test.

EXHIBIT "D-3."

Gas Pressure Notes.

By Alton D. Adams.

Incandescent Gas Mantles.

Van Rensselaer Lansingh before American Gas Institute, October 18, 1906; Progressive Age, January 1, 1907.

Forty mantles tested in four groups of ten mantles each, with the following mean results for each group, as to initial candle power.

Tested at 1½ inches of water.

Group.	C. P.	Cu. ft. Hr.	C. P. per cu. ft.
1	93.0	4.55	20.5
2	64.4	4.25	15.4
3	72.2	4.18	17.4
4	88.0	4.52	19.5

Welsbach gallery burner with deck plate and mantle.

Tests of incandescent burner for maximum candle power and maximum efficiency with different chimneys, at pressures of 1½ inches and 3 inches, in New York Electrical Testing Laboratories, for the Illuminating Engineer, as published in Journal of Gas Lighting, July 30, 1907, page 307.

Length of chimney in inches: Straight 5 7-8, 8. Air 5¼. Hole 6¾, 9⅞.

658 Candle power per cubic foot per hour at maximum candle power. 1½ inches: 23.0, 21.7, 19.6, 20.3, 19.0. Pressure 3: 19.5, 22.4, 19.2, 20.0, 20.5.

Candle power per cubic foot per hour at maximum efficiency. 1½ inches: 24.0, 23.7, 21.9, 21.5, 21.3. Pressure 3: 22.4, 24.0, 21.3, 21.7, 21.6.

The U gauge is simply a bent glass tube with the gas pressure on one side and the air pressure on the other, that was directly on the gas pipe. It was similar to the water gauge on the meter, but a different one—it is placed so that takes the pressure directly from the pipe and this morning I compared the U gauge with the recording gauge and found the two substantially agreed.

Cross-examination:

Exhibit "X-2" is a blue print, it is a copy of page 544 of the engineering news. I did not make the tracing correct copy. I have no personal knowledge as to whether it is correct, because I have not compared it. Exhibit "X-2" is a chart showing the cost of cast iron pipe from 1882 to 1904. This was also taken from the engineering news, and I cannot say it is correct, for I have not compared it. My knowledge is not personal, I have not compared it. The exhibit says, "Compiled from the Engineering News by John W. Alvoid,

C. E. I do not know him personally. I don't know anything about the man. I do not know as a matter of fact whether John W. Alvord is an engineer or not or that he made the original drawing and I have no personal knowledge as to whether the prices of iron as indicated on the exhibit X-2 for the year 1903 is correct, and I don't know that any of the prices in that exhibit are correct or not.

659 I say that there was a variation in the pressure on the charts.

Q. Will you tell us what adjustment they make at the works in order to correct that difference in pressure?

A. I have not looked into it, and I cannot tell. I don't know whether they make any difference or not. I don't know anything about how the difference in pressure is shown on these charts, occurs at the gas works. I know what a governor is, but do not know what kind is used at the plaintiff's works. A governor is adjusted so that as the demand for gas on the consumers' side increases the governor puts a higher pressure on that side.

Q. Suppose that the pressure there exceeds the pressure on the other side what would you do?

A. I don't know. I don't know whether the governor is arranged to provide for that or not. I believe there is as much as two inches variation on the charts during the 24 hours in a day, it is that much on some of them. I do not know what the holder pressure is of the gas works of plaintiff, I have not found out. If I was given the size of the holder I could not tell you what the pressure was, while on the witness stand. I would have to make a calculation. To figure the pressure from the holder I would get the weights of the following parts of the holder and get the square feet of the holder and you have the weight of the folding parts distributed over the surface—that is all. You have to multiply and divide before you get your final results. I believe it is a telescope holder though I did not give attention enough to it so as to know how many there are. I don't know where the dam sheets are on that holder. I never talked with gas engineers and gas men about dam sheets in the

660 holder. I would say there was such a thing as a gas holder uncupping. One of the lifts ceases to be filled with gas and drops out of its connection with the next lower lift that might be called uncupping.

Q. Is that the sense in which the term uncupping of the holder is used in the gas business?

A. I don't know. No other cause occurs to me.

Q. Is it not a fact that the Bistal gauge is used as a general guide to show in a general way the fluctuations of the pressure rather than accuracy in pressure?

A. It is supposed to show the pressure pretty accurately within one-tenth or so. Variations in pressure out on a district at a considerable distance from the works are occasioned by a larger or smaller consumption at the different places in the district and the elevation makes a great difference in the pressure of gas. It is necessary to keep up the pressure to supply the out lying districts, that is the district on the perimeter of the wheel, the tire taking the gas

works to be the center. The one great difficulty in pressure is on account of the small mains, inadequate mains; the mains do eat up pressure in moving through them. And the smaller the mains the more loss of pressure, for a given length.

In order to improve the pressure in a district where the mains are small, the mains must be enlarged either by taking up and putting down bigger ones or adding others or by increasing the pressure, or you may change your connections with the mains, any connections of the mains has a great deal to do with increasing pressure. I think the best plan here, is to put in individual governors for each consumer. This arrangement would require the governor,
661 the safety valve and the blow-off pipe—that is all that I have in mind now. I think they should put on individual governors and then they would be warranted in putting the pressure up so as to save further investment in mains, partially that and to give the consumer a chance to use his gas to the best advantage. I don't put it entirely for the advantage of the company but for both parties.

Q. As a matter of fact the mantle pressure of gas is within the control of the user?

A. He can turn the adjuster, he can control the gas that goes in, but he is not diminishing the pressure, he is diminishing the slit that the gas passes through and in the burner it diminishes the amount of air that is admitted and you would increase it by opening it wider.

In the last few years the mantle burner has greatly extended the use of gas, and twenty years ago I would say that the bulk of gas was consumed through burners similar to that with which I made my tests that is a common open flat flame burner.

I think you will, to take the ordinary incandescent burner get as high efficiency at 1.5 as at a higher pressure. I mean to say that you will get as great efficiency and economy in the Welsbach burner properly adjusted at 1.5 as you will when adjusted for 5 inches of pressure. As to the burners in ordinary use it may be that some of the special forms of so called high pressure burners that are made to bear that unusual pressure may show a little more efficiency. Referring to the Welsbach burners such as are used in Cedar Rapids, I think you would get just as good at 1.5. You may get as good efficiency up to five inches but I doubt it. You
662 may at three inches, but whether you would at five I don't know.

I think a uniform pressure at the works is preferable if you have a first class system running clear from the works into the services of the people without the intervening governors, and I think there should be a uniform pressure at the works under the circumstances I have named.

Q. You have just described a system of mains under which you say a uniform pressure would be maintained at the works take that system and is it necessary for a governor to be maintained at the works?

A. Well, I have not given that sufficient thought so that I can't

say positively. I wouldn't say that there weren't other reasons for a governor at the works. I would want to think about it before I would give an opinion. And assuming the same set of mains I described in my previous answer and a single lift holder, the pressure of which does not vary would it be necessary to have a governor at the works, is another question in the same form. I answer it the same way, that I don't know at this time without giving it thought. I said I didn't know this minute.

Suppose the mains are uniform and are adequate according to my opinion of what they should be still it is not possible to maintain a uniform pressure in all parts of the district.

Q. When you have an idea- system of mains, such as you have spoke- of and an ideal plant, and you are an idealist, and demands are made for gas such as you find in a system of this kind and uniform elevation and the demands are properly made, do you mean to say a uniform pressure can be maintained at the works?

663 A. Yes. A uniform pressure can be maintained at the works and everybody supplied with a gas with a suitable system of mains, but they would not have absolutely the same pressure. I doubt that it would be good engineering to build a plant of that kind, in the light, of my knowledge about it. I would have to figure it up and know the distances.

Q. Assuming that you knew the distances?

A. It would depend on many things I couldn't tell you. I could assume circumstances under which it would be good engineering to do it.

I never designed a gas plant. I am not familiar with the eclipse gas stove, I wouldn't know one if I saw it. I would not go so far as to say that the ordinary gas stove in common use could not be adjusted so as to use it under higher pressure than one and a half or two inches pressure, but I would say that it could be used under the lower pressure.

Q. Do you say as a gas man that gas cannot be used in the gas stove in common use with burners that can be adjusted more efficiently in such a stove under a pressure of 1.5 to 2 inches than under a pressure of 4 inches, the stove being adjusted to the pressure?

A. No. I wouldn't go further than to say that it can be used as efficiently under the lower as under the higher.

Q. Can any lamp secure equal efficiency under a lower pressure?

A. I don't think, so far as I know, that you can get quite so high efficiency with a pressure of 1 to 2 inches as you can

664 with those higher pressures provided you have the proper lamps to work with—that is the best of my opinion. I am not prepared to testify whether the inverted block lamp brought into court by Mr. Ely is a good type of lamp or not, I don't know.

I don't call the analysis of gas very simple. I have to look up the books when I want to analyse it. I don't know what causes this black matter in the lamp; I think it is an excessive amount of sulphur compounds in the gas, that's as far as I will go. I don't know whether there is ammonia or carbonic acid or not. I don't know what that is there. I didn't say it was dirty gas. I said that if it

came out of the gas as the man said, it was the product of dirty gas. I don't know that it is dirty gas.

Q. Can't a laborer on the street or in the gas works make the test and find out in a minute?

A. I don't know. I can't know without looking at my books.

Exhibit "D-3" is the paper containing the tests on the gas mantles two sets of tests that I mentioned on my cross examination. They are not named in the exhibit. I might add that they are recognized in the gas industry everywhere.

I did not personally make the plat Exhibit Z-2. I had it made under my supervision. I staid there with the man and directed the curves and the data. The draftsman working for the city engineer made it, assisted by the city engineer.

The defendant now offers in evidence Exhibit "D-3", which is objected to as irrelevant, incompetent and immaterial. Taken subject to objection.

665 JAMES E. LAWLER was then produced by defendants, who being sworn, testified as follows, on direct examination:

I live in the city of Cedar Rapids, am fifty-five years of age, and have lived in Cedar Rapids for thirty-six years. I was employed for thirty-three years at the B. C. R. & N. now Rock Island shops. I remember when the brick round house and buildings at the shop were erected. The main shops were constructed in 1876. Those buildings are about as good now as when they were constructed.

The engine was installed, the year that the shop was built, and one boiler was put in at the same time and the other is an old locomotive boiler and is older than the other.

Q. What condition are the boilers in today and what services are they giving as compared with when they were installed?

A. They are giving better service today.

Q. Do you know when the engine was given an overhauling?

A. Yes. The main shaft was taken off and turned off, the journals were babbitted and valves put in and a new piston and I think the valves were faced. The boiler that drives the engine is the same boiler that was in there when the engine was first started. That engine has been in continuous use since it was put in, except when it was being repaired and the boiler have been in continuous us- also, and I would say that the shell of the boiler is as good as when it was put in there, it has been in constance use to the present time.

666 The engine has never been repaired but once; well there has been repairs such as a new boxing and piston—but I think it was repaired only at this time that it had the general repairs. The journals of the axes were turned, the valve stems were renewed and the piston was renewed and the valve seats were faced. I would say that the cost of the repairs at that time would not exceed $175.00. This engine had a cylinder 18x24 and was eighty horse power. The tubes were taken out of one of the boilers three times and out of the other four times.

Cross-examination:

The buildings at the shop consisted of brick walls twenty inches thick with pilasters every twenty feet. Some of the pilasters being three feet long and some four, the walls were twenty-two feet high. The structural part of the roof was of steel and the roof was of slate. The shop is full of machinery, consisting of lathes, drill presses and machinery of that character, and all set on foundations in the building, some of the foundations are of concrete, some of stone and some of wood. The engine that was installed when the building was built was a stationary engine that was used to drive all the machinery in use, that is what I said was rebuilt. I think it was rebuilt about twelve years ago. In these shops they practically manufacture engines—rebuild them or make them over. They have a large number of very skilled mechanics there. The stationary engine, is a low speed engine—I think when we started it *is* made seventy or eighty revolutions, but I think it speeded higher than that. They are carrying now about one hundred pounds of steam, when they first put it in they carried seventy pounds of steam, of
667 course the boilers have been repaired and attachments put to them—that is I mean there has been extra pipe put on for different things. The engine and boilers have been repaired from time to time as they needed it. I could not tell exactly in detail what has been put on them.

C. O. Bates.

C. O. BATES was then produced, who being sworn testified as follows:

I live in Cedar Rapids, have lived in this city for nineteen years, and during that time have been professor of chemistry in Coe college. I have made an analysis of the chemical properties of the white *chr*ystal substance found in Exhibit "A-3" and found the *chr*ystals to be almost pure naphthalene, there is a little foreign matter, but it is almost pure. Naphthalene is compound of carbon and hydrogen. I also made an examination of bird droppings.

Q. You may state what you found the properties of the bird droppings to be as compared with naphthalene.

A. Naphthalene melts at 79 degrees and is soluble in warm alcohol. I didn't find any such properties in the bird droppings. Naphthalene is crystaline in structure, the melting point is 73½ and pure naphthalene the melting point is 79.

Bird droppings are composed of various ammonia oxalates and ammonia phosphates. There is a wide difference between them. Under the microscope they have no resemblance to each other. Napthaline being a crystaline substance and bird droppings are not crystaline. They both have a whitish appearance, while
668 under the microscope there is no resemblance, but at a distance of one hundred feet they might have the same general appearance. I would not undertake to say which it was at that distance, looking with the naked eye.

CHARLES J. FOX, recalled by defendants, testified as follows, on direct examination:

I have made an examination of the records of the water company to ascertain the prices paid for cast iron pipe during several years. I have several items which I distributed—that is several car loads bought at different times of the year for each year and show the average for the difference in prices as they might vary. Exhibit "E-3" is a list of cast iron pipe which has been purchased and used for the pipe line for the water in the city of Cedar Rapids for the last ten or eleven years. The first item "the 4 inch cast iron pipe, half an inch thick 22 pounds per foot—that is the weight we used. The whole list is made up of prices paid f. o. b., Cedar Rapids two thousand pounds, for a ton. The other items on the exhibit refer to the years and the prices when given in dollars and cents, all delivered f. o. b., Cedar Rapids. You know that four inch pipe is one dollar per ton more than any other size and I would say always has been.

EXHIBIT "E-3."

CEDAR RAPIDS, IOWA, *Dec.* 16, 1907.

The following list of cast iron pipe was used in the pipe lines of the City Water Works. Prices paid for 2,000 lbs. per ton, all f. o. b. cars Cedar Rapids, Iowa. All sizes are same per ton, except 4 inch which has always been $1.00 per ton higher.

669 No pipe was purchased during the years 1901-1902 on account of the litigation the company had with the city. The thickness of each size also weight per foot is given below:

4 inch cast pipe, ½ inch thick, 23 lbs. per foot.
6 inch cast pipe, ½ inch thick, 33 lbs. per foot.
8 inch cast pipe, ⅝ inch thick, 56 lbs. per foot.
10 inch cast pipe, ⅝ inch thick, 68 lbs. per foot.
12 inch cast pipe, ¾ inch thick, 99 lbs. per foot.
16 inch cast pipe, ⅞ inch thick, 152 lbs. per foot.
20 inch cast pipe, ⅞ inch thick, 197 lbs. per foot.
24 inch cast pipe, 1 inch thick, 257 lbs. per foot.
30 inch cast pipe, 1 inch thick, 319 lbs. per foot.
1896, June $21.50, 6 inch.
1896, August $20.00, 6 inch.
1896, October $20.00, 6 inch.
1897, August $17.10.
1897, October $17.00.
1898, May $16.75.
1898, November $17.75.
1898, May $17.00.
1899, March $17.90.
1899, July $18.90.
1900, July $28.00, 3 inch.
1900, July $29.00, 4 inch.
1903, September $29.85, 6, 8, and 10 inch.
1903, November $28.80, 6, 8, 10 and 16 inch.

1903, December $28.00, 6 inch.
1904, April $24.00, 6 inch.
1904, July $25.00, 6 and 8 inch.
1904, July $24.00.
1905, July $29.10, 4 inch.
1905, July $28.10, 6 inch.
670 1905, July $28.10, 8 inch.
1905, September $28.10, 8 and 10 inch.
1905, September $28.00, 6 inch.
1905, November $29.00, 4 inch.
1905, November $28.00, 6 and 8 inch.
1905, November $28.50, 1 inch.
1905, November $28.50, 8 inch.
1905, December $28.50, 8 and 20 inch.
1906, May $30.00, 12 inch.
1906, June $30.00, 12 inch.
1906, June $30.00, 12 inch.
1906, July $32.00, 4 inch.
1906, July $31.00, 6 inch.
1906, August $32.10, 6 inch.
1906, September $32.00, 8 inch.
1906, October $32.10, 6 inch.
1906, October $32.10, 8 and 12 inch.
1907, May $37.00, 20 inch.
1907, May $37.00, 20 inch.
1907, May $38.00, 6 inch.
1907, May $37.00, 20 inch.
1907, October $34.00, 16 inch.
1907, October $37.00, 4 inch.

CHAS. J. FOX.

Superintendent City Water Works, Cedar Rapids, Iowa.

Defendant offers in evidence the schedule just identified by this witness and which is marked Exhibit "E-3". To which plaintiff objects on the ground that the prices for the pipe for the years 1906 and 1907 are irrelevant and immaterial and furnish no basis of establishing the value of the property of plaintiff in this case, and for the further reason that the price of cast iron water
671 pipe is not shown to be the same as gas pipe. The testimony taken subject to the objection.

These prices that I have set out in the exhibit were taken from the original bills and vouchers. We have the vouchers in our safe clear back as far as when the city took the works in 1903 and the vouchers prior to that are in the office of Mr. Hall. The vouchers show the prices of pipe per ton, and we have the original bills attached to each voucher.

I set forth in this exhibit about all the pipe that was bought during the time since the city has had the plant, and only a portion of it previously and I took is so as to divide it up with the different seasons. There is very little pipe bought during the winter season. I got enough in the exhibit, so as to show the average amount of

pipe purchased is very little. Take for instance June 1906, $21.56 that don't show how much pipe we bought, it simply shows the price per ton of pipe we bought in June on the car load, these are all car load prices. According to my statement pipe wasn't below $30.00 during 1905 and 1906 and has been as high as $38.00 this year. I understand gas pipe and water pipe are all the same except water pipe is thicker and they very seldom cover gas pipe inside or outside. I don't know that gas pipe is higher than water pipe. The light weight pipe would be more per ton but you get more number of feet in the same number of tons though.

J. W. Bowman.

The defendants then produced the witness, J. W. Bowman who being sworn testified as follows, on direct examination:

I reside in Marion, have resided there and in that vicinity
672 all my life, am deputy clerk of the district court, and was formerly clerk of the court.

I have had experience in farming and in determining the rentals that will be gotten on farm lands in Linn county as an investment to some extent. I at present own an interest in a farm that is rented and held as an investment, and I have followed farming most of my life.

Q. What has been the net return on investments in farm lands in Linn County in 1906.

Objected to as incompetent and immaterial it not appearing that the witness is familiar with the returns from farming, and the evidence furnishes no basis for determining the issues in this case. Testimony taken subject to the objection.

A. From my experience, I would answer a trifle less than three per cent; that has been my observation and experience.

Cross-examination:

I mean to testify to my personal experience, and that only applies to the farm in which I have an interest, the farm has 225 acres and is located one mile from Marion. I think it is fairly worth $110 and perhaps $125 per acre. It is rented for cash rent, but is not all tillable land; perhaps fifty acres are in woods and pasture. We have owned it fifty years and paid $12.50 an acre.

A part of it was bought 20 years ago at $45.00 an acre and about 80 acres was bought for $65.00 an acre. The land has been rented for cash, for five years at $3.50 an acre. When I say the return has been less than three per cent I figure on the value of the
673 land being $110.00 an acre. The taxes on the farm are about $125.00. It is rented to my brother-in-law who has an interest in the land—his wife has an interest in the land. I have never tried to see how much I could get for the land as a rental.

My other knowledge with reference to income from farms is that I have in mind other farms that are rented for cash around Marion.

I don't know of any renting for more than four dollars an acre. A person renting land for cash has no risk to run if he gets a good tenant farther than the depreciation in the value of the land and there has been no depreciation happened that I remember of. It is possible that the appreciation in the value of farm lands has made the ownership of such land desirable in itself, aside from the income derived from them and made them desirable investment because of the natural increase of the land.

Exhibit 52 is a statement in the district court of Linn County, wherein Chas. Crago, minor by his next friend Joseph Crago is plaintiff against the Cedar Rapids Gas Light Company. Plaintiff offers in evidence exhibit No. 52. (Exhibit No. 52 is a statement showing that a judgment of $1,000.00 with cost was obtained against the Cedar Rapids Gas Light Company by Charles Crago on account of personal injuries received by the said Crago by reason of his falling into an unguarded open trench.)

CHAS. McHUGH recalled by defendants.

Direct examination:

674 I have made a test of the burner tester that was used by Mr. Adams in making his tests at the city hall and the burner tested one per cent slow. I have a gas meter in my office that metered the gas while we were testing the burners. The gas in the rest of the building is not used through that meter, but it simply recorded the gas used while testing. There is another meter in the building that meters everything used in the building. The name of the meter tester is "The Maryland Meter Prover" it is a standard tester.

Cross-examination:

In testing meters the temperature should be along in the neighborhood of 60 or 70. It is impossible to get it very close, the water in the prover and the air in the room are supposed to be within five degrees of being the same. They claim five degrees is close enough. I know that five degrees is close enough from what I have read about it and what the inspector in Chicago showed me, also from what I saw in the American Meter office in Chicago—that is what they claimed to be.

In bringing in meters to be tested, I let them stand in the office from two to five hours before testing them. It will give time to get the room and meter and everything to the same temperature.

J. W. DARR recalled by defendants.

Direct examination:

Since being on the witness stand I have made an estimate of the cost of replacing the stone wall that is around the barn. The heavy retaining wall around the corner of the ground where the barn

stands is 150 feet long, 12 feet high and 2½ feet thick. The
675 wall itself has 4,500 feet and if there is a footing there should be added about 800 feet allowing a width for the footing of 4 feet and a depth of two feet. The cost of the wall above the footing would in my opinion be $1,575.00 and the footing $280.00. I made measurements of the rip rapping also, and as near as I could tell it is one foot thick. I figured it in different lots. There are 278 feet of stone wall that runs out from the purifying room, laid up fairly well without mortar. I figured that at 12c. a foot or $29.64. Then there is another place, there are 830 feet that is laid poorly, just thrown against the dirt and I figured it at 10c. making $83.00 and the balance of the way around it is made up of broken retorts which I figured at 1,100 feet at 10c. a foot making $110.00.

Cross-examination.

I figured the retaining wall as 150 feet long, and the footing course, I figured as one hundred feet long two feet deep and four feet thick, I had no way of telling what the depth of the footing was. I did not figure a footing course under the entire wall because I thought I figured the wall high enough without taking a footing course because it slopes up from the water. I had no way of telling whether there was a footing under the entire course or not and my estimate on the footing is not based on any accurate information. I don't know the height, or depth or thickness of it, nothing more than what my judgment would lead me to believe was under the wall. I never did any rip rapping and never built any retaining wall.

While on the stand the other day I testified to the price
676 of lumber in the walls. I got the price of $25.00 per thousand from the Hawkeye Lumber Co. I have had that price for some time and am buying lumber all the time and ought to know. I got the price especially for this estimate about five weeks ago, on dimension stuff. I don't know that I mentioned three inch lumber particularly. I never figured that it would make any difference whether it was two inch or three inch lumber. I did not get prices on three inch stuff when I got the price of $25.00 per thousand. The price I got was for the lumber delivered on the ground.

Q. How much do you say it was worth to put the lumber in place, per thousand feet?

A. I didn't say. I don't know; not in that way.

In the course of my business as a builder and contractor I have had occasion to have stone work done and have also made inquiry in connection with cost of this particular work and what it would cost to do it.

J. R. WARRINER recalled.

Direct examination:

I have made a chart showing the paving that has been laid on streets in Cedar Rapids giving a description of the streets, and

extent of paving and when it was laid. The schedule is compiled from the records of the engineer's office. Exhibit "D-3" is such schedule and shows the location of the paving the kind of paving, the year the paving was laid and the contractor who did the work and the kind of material of which the foundation was made. (Defendants offer in evidence Exhibit "D-3," which is objected to as incompetent, irrelevant and immaterial. Taken subject to the objection.)

677 I am a subscriber to the engineering news and it is considered an authority on the subjects of which it treats. I made the blue print Exhibit "X-2" containing the cost of cast iron pipe. It is a copy from a document in the engineering news, Vol. 51, page 544. (The defendants now offer in evidence page 544 of volume 51 of the Engineering News, which is objected to on the ground of its being hearsay, incompetent, irrelevant and immaterial and the exhibit which purports to be a copy of the Engineering News is objected to for the same reasons and because it is not shown to be a correct copy. Taken subject to the objection.)

Exhibit "A-2" correctly shows the relative positions that the buildings and gas holder occupy on fractional blocks 9 and 10. The buildings and holders have been drawn relatively to the same scale that the other parts of the lots have been drawn. On the exhibit is an irregular line between the line marked "rip rap" and the westerly line of First street which is the westerly line of the lot as shown by the original plat of the city of Cedar Rapids. Exhibit "A-2" was made by me.

(Defendants offer in evidence Exhibit "A-2" which is objected to as being incompetent, irrelevant and immaterial and plaintiff specially objects to that part of the exhibit that purports to show the meander line and to testimony of the witness as to the meander line as a mere opinion and conclusion, and not based on any correct knowledge or information, or any accurate survey which is sufficient to furnish means of locating said line. Taken subject to the objections.)

Cross-examination:

678 I gathered together the information contained in Exhibit "D-3" and helped with it. I didn't do the pen work. I got the information that appears in the exhibit from the engineer's office, which keeps a record similar to the exhibit when each job is done—each year we enter the work done on the survey book. We went back to the special assessment book and verified that and also to the contractor's book and found no errors. We went back to 1896. The exhibit shows the measurement of all the paving now existing in the city. It does not show the distances in feet but in blocks. There are three kinds of paving shown—brick, asphalt and macadam—but most of the paving is brick or asphalt. Exhibit "X-2" purports to be a copy of something appearing in the Engineering News. During two or three years I was acting as agent in buying pipe, but only had personal knowledge of the price of pipe for those

two or three years, which are included in the period covered by the exhibit. I have no personal knowledge of the accuracy of the diagram, except as I find it in the Engineering News. All I attempt to do or claim to have done in reference to this matter is to make a copy of the diagram in the book.

EXHIBIT "F."

CEDAR RAPIDS, IOWA, *March* 9, 1906.

To the Honorable Mayor and City Council:

GENTLEMEN: The undersigned special committee authorized to investigate the charges for electric energy and gas as maintained in other cities similarly situated to Cedar Rapids, and to investigate as to the quality of the gas furnished to consumers in this city, beg leave to file the report of R. S. Feurtado, C. E., of Chicago, Ill., who came here and made a thorough investigation as to the qual-
679 ity, and who also made a report approximating the cost of making coal gas in this city, all of which will be of great interest to consumers and furnishes a basis upon which to establish equitable rates. In addition thereto we file with your honorable body statistics received from electric light plants throughout the United States, both municipal and private, showing the charges made in various cities for electric current and which also give a basis upon which to establish equitable rates with reference to charges to consumers for lighting and power.

Your committee would recommend that the incoming council investigate the charges made to local consumers as compared with the charges made elsewhere and that an equitable adjustment be made, fair to the consumers and fair to the company.

Respectfully submitted,

H. CUSHMAN,
W. L. CHERRY,
D. A. ROSS,
Special Committee.

Alderman Cushman moved that the reports of R. S. Feurtado and the special committee be made a part of the record. Carried.

Office of R. S. Feurtado, C. E., Chicago, Ill.

Report to City of Cedar Rapids on the Cedar Rapids Gas and Light Co.

Report of Investigation.

The purpose of this investigation was to determine whether or not the gas made and sold by the Cedar Rapids Gas Light company was of standard quality; and whether or not the service given was such as demanded by a city of the size of Cedar Rapids.

680 This report is also to determine whether the gas company is at fault, and if they are to suggest remedies whereby the consumers will be benefited.

The data from which observations were made and conclusions drawn were as follows:

1. Tests were made to determine the illuminating quality of gas made and supplied by the Cedar Rapids Gas Light Company.
2. Tests were made to determine the commercial purity of gas by the usual tests being made for sulphur and ammonia.
3. Tests for the pressure carried in gas mains.
4. Investigation of complaints.

Under heading No. 1 I beg to say that I had with me in Cedar Rapids a gas measuring apparatus known as "Sugg's Illuminating Power Meter," designed by William Sugg of Westminster, England, a gas engineer of the highest ability. This apparatus was made by the American Meter company, and standardized by means of a Sugg Bar Photometer, the accuracy of which is guaranteed by the American Meter company. I need hardly mention that the American Meter company is the foremost manufacturing concern of meters, photometers, pressure gauges, etc., on which this standard of illuminating value is established in the United States.

The use of this illuminating power meter is to determine the candle power or illuminating quality of gas, and the apparatus is so designed as to make the test very simple and effective; but as this report is not one to cover the design and operation of this meter I will refrain from doing so.

681 I made fifteen tests of gas being used, and found that the minimum candle power was 16.75 candles, and the maximum was 17.48 candles, the mean candle power being 17.11 candles. Sixteen candles being standard gas it will be readily discerned that the gas was of standard illuminating quality in every respect. I attach hereto a statement showing in details the tests as made, and the hour of day tests were made.

This sheet will also show the hour of day, candle power, pressure and results as to sulphur and ammonia.

Under heading No. 2: Tests were made by the usual manner for sulphur by the use of acetate of lead in solution; as well as for ammonia by the use of red litmus paper. These tests, of course, were not laboratory tests, but were the tests usually made on such occasions to determine the commercial purity of gas; and I beg to report that I found absolutely no trace of sulphur or ammonia in the gas.

Under heading No. 3: T*h*ests were made for pressure on mains, and I found that at 1 p. m. a pressure equivalent to a column of water three inches high existed, and at 5:31 p. m. a pressure equivalent to four inches of water.

I have in my possession charts taken from Bristol Recording Pressure Gauge for the following dates: December 12th, 14th and 15th, and January 11th, and beg to append herewith a statement showing the pressure as recorded by these charts. These charts were supplied me by the Cedar Rapids Gas Light company, and form part

of their records, and I would suggest that the city officials
682 inspect their charts from time to time, which I feel certain the officers of the gas company will be glad to have them do.

Three inches is about the pressure I would recommend a gas company to carry, but there are times when existing conditions are such that it becomes necessary for a company to carry pressure in excess of this amount, and conditions exist in Cedar Rapids where it would not be possible for a gas company to give service to some portions of the town if a pressure less than four and one-half inches were carried. I may mention that it is not fair, nor is it proper for the city council to attempt to compel the gas company to carry any particular pressure on their mains, from the fact that this is somewhat unusual and is not practical.

The gas company is most affected by high pressure in their mains, from the fact that the leakage which goes on night and day is greater under four and one-half inches pressure than it would be under three inches pressure.

As far as the consumer is concerned, he has the advantage over the gas company, from the fact that he can regulate the pressure immediately after the gas leaves the meter; in other words, he can either insert a pressure regulator or he can reduce the pressure by partly closing the gas cock at the meter.

This test was a fair and impartial one, and one whereby the city had the advantage over the gas company from the fact that the company was not notified one minute in advance that I was in Cedar Rapids for the purpose of making this test, so that they had not time to make any change in the manner of operating the gas plant so as to give the results which I have mentioned.

683 I was introduced to Mr. Averill, the president of the gas company, by your mayor, and I was in his presence all the time until tests were started.

The series of tests were conducted at the office of the Cedar Rapids Gas Light company, and I must express my appreciation of the courteous treatment received at the hands of the officers and employés of this company.

It is with great pleasure that I report to you the following: I found the quality of gas made and sold by the Cedar Rapids Gas Light company to be standard as to illuminating value, and to be commercially pure from sulphur and ammonia. I say I take pleasure in reporting this, and will qualify myself by saying that it is not always that after making tests for municipal corporations I am enabled to thus report.

I may mention that Prof. Bates (professor of chemistry of the Coe college), was present with me during a part of the time I was making tests, and he was very much interested in the manner in which tests were being made, and I endeavored to explain to him the mechanism, as well as the theory, of the Sugg's Illuminating Power Meter, which he readily understood; and I also instructed him as to the operation of the apparatus; so that he could make further tests on behalf of the city, if desired, as I deemed it best to leave the

meter and pressure gauge connected up for at least a week from the time I made by tests.

Under heading No. 4: Investigating complaints of certain parties at the request of Mayor Huston, namely: Mr. Hough, 224 Sixth avenue west, and Mr. Stookey, 408 Fifth avenue west. I personally visited these parties at their residences, and beg to report the following:

I found at Mr. Hough's residence that Wel-bach incan-
684 descent gas lamps were being used, under conditions absolutely foreign to the principle on which the lamps are designed, and I advised this gentleman of this fact and suggested that the lamps be properly fixed up, whereby he would obtain better results. I also found that instead of the housewife using the oven for baking purposes she was using a gasoline oven over one of the burners on the top of the stove, thinking she was effecting a saving.

In a family of this size, namely: man, woman and one child, $2.50 a month is not an excessive bill for fuel, and during December and dark months a light bill of $1.50 is not excess, which makes a total of $4.00 per month for light and fuel.

Mr. Hough's bills for the past six months were as follows:

July	2.65
August	2.19
September	2.65
October	4.83
November	4.03
December	4.26

It will be noticed that there is an increase in October over September of 82.36 per cent, and there must be some local cause for this, as it will be readily appreciated that the gas company has no means of increasing any individual's bill through distributing poor gas without affecting all consumers in a like manner.

At Mr. Stookey's residence I found that considerable laundry is done at home, which means consumption of gas for washing, as well as ironing.

I also found that his incandescent gas lamps were in bad con-
dition, and by taking off and cleaning a Welsbach lamp in
685 his dining room (care being taken not to break the mantle which was on the lamp) this lamp was put back with the same mantle and a splendid light was the outcome. A Lindsay lamp in a back parlor was also put in good order, and the expression from the young lady of the house was that they never had as good light before.

From the fact that there are two light chandeliers in each room, one arm of which has an incandescent gas lamp and the other an open flame, it is natural to suppose that if the incandescent lamp was not giving enough light the open flame would be used as a means of obtain-g more light, which means a larger consumption of gas than is necessary.

I find that these parties began using gas on September 18th, and their bills are as follows:

September	$2.42
October	7.36
November	7.82
December	11.50

I must admit that these bills are excessive, and there is one of two reasons (outside of the poor condition of the lamps) which causes these excessive bills, namely:

The housewife is not familiar with the use of the gas range, or there are roomers in the house who burn gas all night.

I had a superintendent of distribution of the gas company with me, and I made certain suggestions to him which, if carried out, I think would prove to the satisfaction of the parties that they were using the gas, and thus enable them to economize.

686 In closing my report I beg to say that I am of the opinion that the Cedar Rapids Gas Light company is giving excellent service, and that the cause for complaint is due to local conditions, chief among which is the inexperience of housewives in the handling of gas ranges, and I think that education in the use of gas appliances, and not better service, is what is needed in Cedar Rapids.

Respectfully submitted,

R. S. FEURTADO,
Consulting Engineer.

January 15, 1906.

Detail of Tests Made at Cedar Rapids, Iowa, January 12, 1905.

Hour.	C. P.	Pressure.
1:00 p. m.	16:75	3.0
1:02 p. m.	16:50	3.0
1:04	17:30	3.1
1:06 p. m.	17:26	3.1
1:08 p. m.	17:25	3.1
1:10 p. m.	17:25	2.1
1:20 p. m.	17:00	3.1
2:20 p. m.	17:30	2.95
2:35 p. m.	17:24	2.95
2:40 p. m.	17:00	2.95
5:05 p. m.	17:00	3.4
5:13 p. m.	16:80	3.7
5:26 p. m.	17:10	3.7
5:29 p. m.	17:48	3.7
5:31 p. m.	17:24	4.0

JANUARY 18, 1906.

Hon. Chas. D. Huston, Mayor, Cedar Rapids, Iowa.

DEAR SIR: On my return to the city today I found your 687 letters of the 15th and 16th, one containing information regarding the cost of coal, coke, etc., and the other returning report for correction, which I regret to have caused you the necessity of doing; and will say that instead of the word "to" it was intended

to have the word "on." I, however, correct and return you reports as per notation made by you, so that the error as made is properly corrected.

In your letter you make mention of the matter of the use of iron oxide for purification; and beg to say that iron oxide (commonly called "iron sponge") is the material universally used the world over in the purification of gas for two-fold reasons:

1. Iron oxide recomves from gas sulphurated hydrogen, which has a very disgusting odor and is one of the impurities the gas company endeavors to remove, and one for which I made tests in the usual manner with acetate of lead.

A 30 per cent solution of acetate of lead was used by me—which was as strong as it is possible to get this in solution—and had any perceptible amount of sulphurated hydrogen been in the gas it would immediately have shown up on the paper used in the tests.

2. The old system of purification was by the use of slack lime, and was very expensive; and with the continual reduction in the selling price of gas it became necessary to find a substitute for lime, and oxide of iron was adopted. When lime is used the spent lime is absolutely worthless, except as a fertilizer; while, with the use of oxide of iron the foul oxide is taken out of the box and revivified by means of continually turning over same, whereby all im-
688 purities taken out of the gas by the oxide of iron is spent in the atmosphere, thereby enabling a gas company to more cheaply purify the gas by being able to revivify and use iron sponge over a great period of time.

By taking a walk into the purifying house of any gas company immediately after the box is changed one cannot fail to appreciate the amount of impurities removed by the use of iron sponge; and I will call attention to the fact that physicians usually recommend whooping cough patients to go down to the gas works and inhale the fumes that are being evaporated out of the purifying material.

Apart from sulphurated hydrogen, oxide or iron remove- a great deal of ammonia from gas.

Regarding the reduction of air pressure to prevent explosions, beg to say that the test for candle power showed gas above standard.

The Welsbach Incandescent Lamp company claims that their lamp admits seven parts of air to one part of gas, thus producing the Bunson flame, which heats the mantle to an incandescence.

The makers of gas stoves put on their stoves an adjustable air mixer, so that the amount of air admitted into the mixer can be regulated according to the quality of gas; or in other words, to produce perfect combustion, a gas of 16 candle-power would probably call for the openings in the air mixer being about two-thirds open, while gas of 15 candle-power would take less air to produce proper combustion; therefore, the openings in the air mixer would be reduced to probably a half or two-thirds.

Users of both incandescent lamps and stoves probably are sub-
ject to the annoyance of the gas firing back, on igniting, in
689 the air mixer, and I may say that this is due to the fact of imperfect mixture; or, in other words, too much air is

being admitted for the amount and quality of gas being used, and, therefore, under such conditions it is necessary to turn off the gas, thereby extinguishing the flame in the air mixer and partly closing the air mixer, thereby reducing the amount of air admitted; then the gas would burn at the proper place, namely, the burner.

I beg to point out the fact that there is no danger of explosion from gas unless carelessness is the cause; or, in other words, a gas lamp, or a gas burner, or a gas pipe, will not explode as long as there is pressure on it. One of two things will happen; if the gas is too poor to burn it will not ignite; and in making this assertion I beg to point out to you the fact that if explosions from poor gas in a burner were possible, then a gas holder would explode the moment a consumer attempted to light the gas. In other words, if a hole of any size were cut into the side or top of the gas holder at the plant of the Cedar Rapids Gas Light Company, or any other plant, and a match applied, as long as there was gas in the holder; or in other words, as long as there was pressure to be able to drive the gas from out the holder, the result would be a large flame which would continue to burn until the holder was empty and no more pressure given, when the flame would go out. The oxygen, or atmosphere, would immediately enter the holder and mix with the small amount of gas left in the holder, whereupon an explosive of very high power would be created, and upon the application of a match the result would be that the holder would immediately explode.

Regarding the report of an engineer showing 180 per cent of impurities in the gas as furnished, I beg to point out to you that
690 I did not make a laboratory test of gas, and none other than a chemist having the proper apparatus can make this laboratory test.

There is no standard, of purity in the United States, outside of the District of Columbia, and this standard sets forth five units of ammonia, to the thousand cubic feet of gas, which information you have in your possession; and I will say that no engineer should attempt to say, off-hand, without making a laboratory test, that the gas contained 180 per cent of impurities.

Prof. Bates, of the Coe college, certainly possesses the necessary qualifications and experience to make these tests, but whether or not he has the proper laboratory apparatus, I am not in a position to say.

Mr. B. C. Choller, a gas engineer of considerable reputation, invented and patented the means of lengthening the life of purifying material in the box while in use, by the admission of not over 2 per cent of air; and also by designing certain apparatus whereby the flow of gas through the purifying material could be reversed.

To the layman 2 per cent of air seems a large amount for admission into the gas, and I beg to point out that this amount of air admitted does not exist in the gas after it leaves the purifying box, from the fact that a good deal of the air admitted is absorbed in what is called revivification in situ. This practice doubtless calls forth the remark generally made that the gas company has an air pump for pumping air into the gas.

I trust that this explanation and letter (which I will ask you to make part of my report,) will be satisfactory to you.

Respectfully submitted,

R. S. FEURTADO,
Consulting Engineer.

691 *Approximate Cost of Making Coal Gas at the Cedar Rapids Gas Light Co., Cedar Rapids, Iowa, Prepared by R. S. Feurtado, C. E., Chicago, Ill.*

Based on the Following Costs.

Gas coal, per ton	$4.50
Labor, per day	2.00
Coke, per ton	4.50
Tar, per gallon	.015

Cost of Manufacture.

Based on operation of one bench of six retorts; four hour charges; 350 lbs. to mouthpiece; with average yield of 4.8 cubic feet of gas to pound of coal.

Coke made from carbonized coal per cent	.62
Coke made used in furnace, per cent	.30

350 pounds coal x 36 charges, equal 12,600 pounds coal; 12,600 pounds coal x 4.8 cubic feet gas, equal 60,400 cubic feet gas per twenty-four hours.

Material, Labor, etc.

Coal, 6.3 tons at $4.50	$28.35
Labor (two men at $2 per day)	4.00
Water	.50
Purification	.50
Foreman	.50
Repairs and maintenance	.50
Total	$34.35
Deduct coke saved, lbs.	7,812
Less used in furnace	2,343
	5,479
692 Depreciation, 5 per cent	273
5,206 at 45 cents	11.74
Tar made, 6.3 tons coal at 11 gallons to ton equal 69 gallons at 1½ cents	1.03
Total	12.77

Deduct from	$34.35
Balance	$21.58
Add for leakage, 10 per cent	2.15
Total cost of making 60,400 cubic feet of gas	23.73
Per thousand cubic feet	.37

Cost of Distribution.

Based on 70,000,000 cubic feet of gas sold in 1904. (See Brown's gas directory.)

The cost of distribution, including repairs to mains, services, complaints, supervision, etc., should not exceed 25 per cent of cost of manufacture, which would make a cost of, say, 9 cents per thousand cubic feet.

Office Expenses, Fixed Charges, etc.

Based on sale of 70,000,000 cubic feet of gas per annum.

1 manager	$1,800.00
1 clerk and cashier at $60	720.00
1 clerk and cashier at $50	600.00
1 superintendent	1,200.00
Office rent, postage, etc	1,000.00
Taxes and insurance	500.00
Setting and removing meters etc	1,000.00
Total	$9,820.00
Or per thousand cubic feet	.14

693

Recapitulation.

Cost of gas in holder, including leakage	$.37
Cost of distribution	.09
Office expenses and fixed charges	.14
Approximate cost of gas at consumer's meters	.60

Estimated Earnings.

70,000,000 cubic feet gas sold at $1.15	$80,500.00
Cost 70,000,000 cubic feet gas at 60 cents	42,000.00
Balance	$38,500.00

R. S. FUERTADO, *C. E.*

Rebutting Evidence for Plaintiff.

R. A. Wallace.

The plaintiff then re-called the witness R. A. WALLACE who testified on direct examination as follows:

I stated in my direct examination that I had been in the contracting business in wrecking building- of different kinds, including brick buildings, and have also had experience in the selling of old iron or scrap for junk. I have had quite a large experience in wrecking of all kinds of houses and brick buildings. I have wrecked for the purpose of building larger. I have bought buildings for the purpose of procuring material and have sold junk all my life and my experience covers a long time and has been with buildings and various articles. I have had *ex*tween thirty and forty years experience in building brick and frame buildings in Cedar Rapids, brick especially. I built three churches, the Warfield, Pratt & Howell
694 wholesale building, Cedar Rapids Savings bank, the telephone building, Dows auditorium, Miller hotel, the Delavan hotel, the Sinclair market building and have been actively engaged in building brick buildings all my business life, and during that time I have had occasion to tear down brick buildings to a considerable extent. I tore down the old Baptist church, the old Sinclair market and have had experience in wrecking buildings all through my business career and I know the value of the old brick buildings for salvage. I am acquainted with the buildings of the plaintiff, and gave an estimate on them. The salvage from those buildings after they have passed their useful life would be worth nothing, and the reason for this is because the cost of wrecking them would be more than the salvage would be worth. The salvage would be an indefinite thing; the buildings that I have wrecked have never netted the owner a cent, a building will sometimes sell for one per cent of its cost, never more than four per cent. It cost to wreck the Chicago World's Fair buildings $100,000.00 more than the salvage brought. I bought in Cedar Rapids a brick building 140 feet long three stories high for $100.00. I bought $8,000 building for $50.00. The William Greene house that cost $7,000.00 was sold for $100.00. The Turner hall on the corner of 7th avenue and 3d street cost $10,000 and was sold for $100.00 and it was a new building, having been built only six years. It was sold two or three weeks ago at public auction. From those experiences I draw my conclusions that salvage is almost impossible to get out of an old building. I believe it would cost $2,000 more to wreck plaintiff's buildings and clear the ground, than they would get out of them. Another instance is the Chicago post office the wrecking company got $25,000 and all salvage for wrecking it.

695 My experience with reference to the actual cost of wrecking old buildings as compared with the value of the salvage has been, I wrecked the Sinclair building which was fairly good. better than the average and it didn't net us one cent. It is seldom

that we can use old brick. If they are well cleaned we can sometimes use them.

The salvage of the buildings of plaintiff after the useful life of them has passed would be only good for kindling wood, they wouldn't pay for tearing them down and cleaning the ground. As far as the brick cisterns are concerned it would cost $1.00 a yard to get ride of the masonry—you could fill the excavation for 12½ cents a yard. There would be no value to the salvage of the brick and wooden buildings if they were to be wrecked at the present time.

The source of my knowledge of the value of scrap iron is the market reports and what I get for it when I sell it. I have had more or less to do with dealing in it all my business lifetime. The cost of marketing the scrap iron that you would get from the holders would be more than you could get for it. You would have to cut the holders up small enough to handle and 30c a hundred pounds won't pay for taking them apart and cutting them up and getting them to the junk shop. The same would be true of anything that is wrought iron and difficult to wreck. The salvage in the buildings would be in the iron, but it would not be enough to cover the cost of wrecking, that is to take down all the structure and clean the brick. Some parts of the iron would be valuable. The "I" beams would be worth in the junk shop 50c a hundred and some of the cast iron is worth 30c but the cost of wrecking would be more than that.

696 In my business I frequently come across pipes, one and two inch, that are under ground, but we do not take it up for it does not pay. I have not had anything to do with three inch or larger pipe.

I built the trusses in the purifying building and know the construction of them. They are worth $92.00 in place each. The contractor does not always include everything in the item that is under consideration—the staging is one of the items that would enter into this—I want to explain the trusses in my original estimate—the truss would be an item over and above what it would cost to prepare the roof ready to receive the tar and gravel; but the truss in detail is 1,500 feet of lumber, some of which cost $40.00 and some $30.00, the lumber at the average price of $35.00 M. would be $52.50. It is worth $15.00 a thousand for making the truss, and designing them would be $15.00 more. It is worth something to raise them either by derrick or staging, to build a staging 28 feet high would be worth $20.00 and the stone underneath and iron would be $7.00, that is the way I arrived at the cost of the trusses, and that is what Mr. Averill paid for them. The cost of the trusses in the coal shed was 50c a lineal foot. I want to explain the cost of these things for in detail it would have a different showing from when made in an estimate of the whole. You have to put the truss up to get it into the air. It takes four days to build a truss and so many days to build staging, that is where the cost of these things comes in. The building of the walls is also more expensive in these buildings, than in buildings where they have floors every 8 feet for you have to

have staging and all these things add a considerable to the cost of building the high walls.

697 I was born in Cedar Rapids and during the early part of my life lived on 7th avenue between 4th and 5th streets about four blocks from the gas plant. I have been very well acquainted with the river and the lots on which the gas plant is now located ever since 1868 or before the gas plant was there and have been ever since, I think that the banks of the river are about the same now as then. I am sure there were 140 feet from 1st street to the bank at the corner of 7th avenue and perhaps more. The river never had eaten into the bank there, and as to the other lots I can't see any difference in them from what they were—if anything the eddy has cut out rather than filled in where we came in with the rip-rap wall. I think it has been cut out rather than otherwise. It seems to me the bank was fuller in an early day than now.. My best judgment is that they were full lots, by full lots I mean 140 feet deep.

Cross-examination:

I think there is no salvage at all on those brick buildings and none on that iron. I made a statement that there was a salvage on some of the iron, but not enough over the cost of wrecking the other parts of the building—there is some flooring that could be saved, but that would not overcome the cost of wrecking the other parts of the building.

E. J. C. Bealer.

The plaintiff then produced the above named witness who being sworn testified as follows, on direct examination:

698 I live in Cedar Rapids am sixty-two years of age, am in the general contracting business and am owner of a stone quarry and am also in the business of building stone walls of all kinds. I have been engaged in business for 35 years and my contracts extend to about $100,000 a year.

I built the retaining wall for plaintiff between its property and the river. The foundation is about five feet below extreme low water. To build the same it was necessary for me to, and I did put in a regular sheet piling coffer the same as I would in ordinary bridge construction and excavated down in the ordinary way. The wall at the bottom is between five and six feet thick. There was concrete footing and the stone masonry was started on that. It is a battered wall and 2½ feet wide at the top. We got $49.00 a thousand feet for the lumber of the coffer dam in place and the coffer dam is about one hundred feet long and has a return.

Thomas Suchomel, recalled by plaintiff.

Direct examination:

I am the foreman of the gas works. I remember the refilling of the benches of 9s. They were out in 1906, they became useless in August of that year, two of them had been in use about 22 months

and one bench about 18 months. They had all become worn out about August, 1906, and were in bad shape, they were leaking and what we call going down and were burned out. The first bench was refilled in July, 1906, and the material was all on hand for the refilling of the three benches in 1906, but the other two were not refilled until August, 1907. The new one was put in in August, 1906, was used at once and is in use now. The water gas set was rebuilt and put in operation in May, 1907.

699 I know where the water in the river stands when it is low water and where it stood on the bank before any filling was done on the Gas Company's lot. Since 1884 I have been pretty familiar with the amount of rise of water in the river from year to year, and in my judgment it is about six feet, that is the difference between the high water and low water. It was about 175 feet from 1st street at 7th avenue before any filling was done or to the place on the bank where the high water would come and about 150 feet at 8th avenue; on the lots below 8th avenue where the big holder is it is about 120 from 1st street to high water mark, that is the lot farthest south, and that was before any filling was done. Before any filling was done by plaintiff the water from the river had deposited dirt and sand on the back ends of those lots. There was always back water there, and always a deposit of dirt and some other matters there. The current seems to come back and run southwest and strikes the bank and of course it forms an eddy towards these lots at about 9th avenue and when there is high water it comes pretty near up to 7th avenue. There had been a deposit of 12 or 15 feet wide and 2 feet deep before plaintiff began filling.

During the years 1902, 1903 and 1904, we used about 100,000 cubic feet of gas per month at the works, we didn't use as much during the last two years, owing to the installation of arc lights which has reduced the consumption. Open tip burners consume more gas than the mantle burners.

The way that gas is tested for sulphur or ammonia is to dissolve sugar of lead and take that solution and put it on a piece of white paper and hold it over an open jet for a minute and if there

700 is any sulphur in the gas it will turn the paper yellow. We make a test on the distribution system and also test the purifier separately. We have a service that comes in from the street mains and we test it from that.

We make a test for ammonia with litmus paper. You take ordinary litmus paper and dip it in water and hold it over the jet and if there is ammonia in the gas it will turn blue and if there is none it will stay red. So far as the distribution system is concerned these tests are made twice in every twenty-four hours.

The gas that we tested in the past did not contain either sulphur or ammonia. We have never sent out any gas with sulphur or ammonia in it.

The station meter consists of an outside cast iron shell and on the inside is a drum or a diaphragm drum that is divided into compartments. The gas comes in on one side and revolves the diaphragm and goes out on the other.

Q. Is there anyway in which that station meter could gradually get so that it would measure more gas than runs through it?

A. No, sir. The meter cannot gradually get fast. If the meter had to- much water in it, it would measure more gas than went through it. When the meter was set a water level was taken and the water level mark on the meter, and we always maintained it at the level until we tested it and after the test was made we lowered the water level. I assisted in making the test of the station meter, and it was done with a meter prover. We shut the gas off from the maker and passed the gas through the prover and then the
701 gas from the meter passed through the station meter and from the station meter into the air; and the result showed that the meter was 4½ per cent fast.

The water level had not been changed from the time the meter was installed up to the time of the test, after the test we changed the water level and it has not been changed since. The water level was changed to correspond with the testing of the meter.

Q. Do you use the compressor gauge down at the works.

A. Yes sir, to give a record of the pressure on the street mains; we do not depend on that gauge to record the correct amount of pressure. We depend on a water "U" gauge at the governor. There is a compartment on one side of the governor also on the stem that is filled with mercury and when the flow gets to a certain level, the mercury runs over and causes it to bear down, and that causes it to increase the pressure. The variation of the pressure at the works does not mean the same variation out on the system, and the object of varying the pressure at the works is to keep a uniform pressure on the system. We maintain as near as possible a uniform pressure on the system.

I remember Mr. Adams and Mr. Bemis being at the works, we stood in the door and Mr. Bemis saw the spots on the holder and asked what they were and Mr. Adams told him they were leaks, after they went away I went up there and examined the holder at the place where Mr. Adams said he got up in the morning and got some stuff off of. I made an examination just as soon as he cleaned it off. He got it from the third lift, the last lift right near the wall. The part of the holder that he got that stuff from is
702 in the water part of the time and was in the water when they were there before and I suppose they saw this on the upper lift. I think the little white specks in Exhibit "A-3" are napthaline it dissolves in water when heated or melted—and there is the same stuff in the water seals. We inject steam into the water to keep the seal from freezing and that melts the naphthalene and the vapor will adhere to anything that is iron. I applied the soap test to where Mr. Adams got this stuff off of the holder and there were no leaks there. Naphthalene will be deposited around the gas works where there is no gas escaping. It is deposited all around the works. The office is about five blocks from the plant. There is a set of scales on which coal was weighed—railroad scales down on first street. They were in use and the coal was weighed on those scales, but they haven't weighed anything there to amount to any-

thing for pretty nearly a year. The scales are too small—they won't weigh the large cars. A year ago it was the custom of the gas company to have coal weighed on those scales. We have had from 1,000 to 5,000 pounds difference in the mining weight of the cars of coal and what they weighed here—the mining weights were always the heavier. The shrinkage will average from a ton and a half to two tons. There is also some waste of the coal in unloading.

The cost of handling the coal averages about 15c a ton for unloading; 7c for shoveling—when it is shoveled out of the car on to the floor of the coal shed it costs 7c; when it has to be shoveled twice or three times it costs 20c per ton. About one-third of the coal is handled at 7c and the rest at 20c. I hire the men to do the shoveling.

I have been with the company during the past years when
703 there have been changes made in the yard connections, and when the yard connections are taken up we generally have to put in new material.

Cross-examination:

The scales at the works are out of commission now. When there were any great difference in our weights and the mine weights, I always made a note of it.

I discovered the station meter was fast.

Q. You keep a record every time you test the gas don't you?

A. Yes, sir, and it shows we test it twice in twenty-four hours. I don't keep the record of it all the time. The tests are thrown away after a certain length of time. They are kept about thirty days. The gas that we send out is pure. There is no sulphur or ammonia going out in any of it. The tests are not put down in a book, but the sheets upon which the tests are made are kept for a few days. We never found any impurities on the tests in the distribution system. I think that Mr. Fuertardo proved that the gas was pure. I think that he satisfied the city to the extent that they didn't want his opinion any more.

The governors are not set by weight in pounds, but the measurements are made in weight of inches of water.

The river comes to the edge of the company's property. The company's lots extend out into the river some distance, and the water formed an eddy between 9th and 7th avenues. The river current is on the east side until it strikes 7th avenue and that throws the current to the other side. When they were building the retaining
wall they had to have a coffer dam to keep the sand from
704 caving, and to keep the water out that came in from below the bed of the river. The company's wall is further out than the bank at the sash and door factory just above, but I think the Milwaukee freight house grounds are a little farther out, that is also up the river and north of us. The holder is not on made ground.

There are white spots around the seams of the holder where it is put together, which in my judgment is napthalene. I knew it was napthalene before they brought it up here. I saw the white spots before I came here to testify and knew they were napthalene. I

never paid any attention to the white spots on there until Mr. Bemis and Mr. Adams were there. The white material that Mr. Adams brought into court did not come from the places where I saw the spots. I saw him scrape it off. I did not go around with them all the time they were examining the holder. They went around and examined the holder and they asked what the white spots were. I examined the holder and found the birds there and found everything after my attention was called to it. I went up on to the holder and walked around and threw out some dead birds out of the cups, and I saw all of this, and if I had been given permission I would have told you all of this that I saw before.

We have no record of the gas used at the works in 1902, 1903 and 1904, I only know that if we used too much gas I got a reprimand. I don't undertake to keep any account of the gas used at the works the record of that is kept at the office, and I suppose the meter reader reads the meters at the works. There is a record at the office of the gas used at the works.

705 GEORGE MCLEAN recalled by plaintiff.

Direct examination:

I have had experience in buying coal from the mines for the manufacture of gas. I have made all of the purchases for the Dubuque company for twenty years, also for the steam heating companies of which I was purchasing agent. The custom among gas people is to buy at mine weights. The coal upon arrival at the place of delivery is usually short, in fact I don't know of a year for more than twenty years that I have been purchasing agent for coal that it has ever held out. The amount of shortage in weights depends somewhat upon the character of the shipment. If the shipment was made in box cars and over relatively short distances, it is my practice to estimate about .015 per cent. shortage, that is what our experience shows it to be. If we take coal shipped in open or coal cars the shortage would be .0225 per cent. The fair allowance for handling coal per ton and putting it into the retort house and shrinkage would be 10 — per ton for short weight, about 7c for handling and 9c for taking from coal shed to retort house, making about 26c for rehandling. If it is rehandled from the floor instead of the car it will cost considerable more. In our works we pay ten cents more for shoveling coal from the floor than we do for shoveling from the box cars. In addition to that the cost of the coal due to rehandling will depend upon the character of the floor.

Napthalene forms about every gas plant. It begins to be seen as soon as gas leaves the hydraulic mains; at every point between the hydraulic main and the distribution system it forms and may be seen about the seal also and on the interior of the seal and holder

706 and upon every piece of apparatus, and in general underneath your feet at every part of the gas works, even though the utmost care is taken to maintain cleanliness of the plant, it is usually in the form of flocculent crystals and it is absolutely impossible to prevent it from gathering at every part of the works,

The deposit of napthalene does not indicate leaks at all, not any more than hoar frost on the window would indicate a hole in the window pane—it sometimes resembles an extremely hard hoar frost and forms on the surfaces with which it comes in contact.

I can explain how the little specks of napthalene would be found in and about the holder. I observe them where the holder has risen out of the tank and see the ridges of napthalene along the holder, in other words these flocculent crystals float in the air and on the tank and on the water.

The most effective test for leaks in the holder is with soap suds—I have had men who never saw a leak, take a brush and with soap suds make the test, and by which leaks can readily be de-cted.

Q. How is gas usually tested at the works for its commercial impurities?

A. It is usually tested to ascertain if sulphurate of hydrogen or ammonia are present in objectionable quantities—that is quantities objected to by any department or commissioners regulating the purity of gas.

The test for sulphurate of hydrogen is usually made by means of acetate of lead which is put on paper and the paper exposed to a jet of gas usually for one minute. If the gas contains sulphur the paper is tarnished—it is turned dark brown or almost black.
707 For ammonia it is customary to take a strip of litmus paper, moisten it and put it in a stream of gas and if ammonia is present, the color of the litmus paper will be changed to blue—this test can be made in one minute. If the gas passes these tests it is commercially pure, and complies with the regulations of commissions wherever such regulations are in force.

I saw an inverted block lamp in the court room, and the black deposit in it. That black deposit was not caused either by sulphur, or ammonia or other impurities in the gas. It shows some lamp black, and the richer the gas is in candle power the more lamp black would form. The black material was solely a product of improper and imperfect combustion without any relation to the purity or impurity of the gas. In my own personal experience I find the chief cause of the blackening of the mantel whether an upright Welsbach or any other incandescent lamp is dust that comes from the rooms and which obstructs in the course of time the air passage and prevents the proper mixture of air with the gas for its proper combustion. It is also dirt, that unless the cup in the fulston tip is regularly cleaned and all deposit removed will interfere, with the flow of gas; and the blacking of the mantel is due nine times out of ten to improper combustion of the gas.

Q. If the air passages are properly adjusted in the burner does the high pressure up to four or five inches have any effect on the deposit you are speaking of?

A. If they are perfectly adjusted not at all—if they get out of adjustment and if the air is unsufficient then higher the candle power of the gas the quicker the lamp black will form and
708 the more of it. I am familiar with most of the different lamps and mantels in use. There are mantel burners so

made that they may be readily adjusted to the pressure of gas from 2½ to 5 inches.

I am familiar with the house governors that are used and can give their cost in a general way. In my opinion it would cost $8.50 for each house governor. When I went into the gas business fully 98 per cent. of the gas made was used through the open tip, flat flame burners, and for illuminating purposes, and at the present time less than ten per cent. is used through that kind of a burner and 60 per cent. of the remainder is used for fuel and industrial purposes. Gas under a pressure of from three to five inches is more economical and efficient than under a pressure of 1½ inches. In a good many places small compressors are purchased by the consumer at his own expense for the purpose of increasing the pressure of gas—the purpose being to get a higher efficiency.

Assuming there is a variation in the consumption it is absolutely impossible to maintain a uniform pressure. If for example you had a holder in everybody's house and they were to turn the gas on and off, that would make no difference in the pressure, but if you are reaching them by means of the mains, the fluctuation of the demand, two or three people constantly turning on the gas and turning it off would make a constant variation in that district. In the practical operation of a gas plant a variation of from 2 to 2½ inches of water is reasonably to be expected and that amount of variation would be rather low for a city of the size of Cedar Rapids. I have seen variations in Chicago of 5½ in one day.

709 To adjust the governor at the works for a constant and uniform pressure would be the opposite from good engineering. I should expect to see, in Cedar Rapids no less variation than from 28 to 44 tenths, and I would suppose a greater variation would be necessary to meet varying demands of the district. An open flame flat tip burner is not an economical burner, it is most wasteful. For each cubic foot of gas consumed the incandescent burner will give six times the illumination obtainable from the flat flame burner. The ordinary Welsbach burner has an efficiency of twelve times the burner which was used by Mr. Adams in making his tests. The gauze is not put in open pillar tip burner to obstruct the gas but to give circulating motion as it approaches the tip and that circulating motion secures better aeration of the gas at the tip.

Q. Suppose you should take a Welsbach burner adjusted for the most efficient use under a .15 pressure and take the same burner, using the same gas and adjust the burner for the most efficient use of which it is capable of, the gas under pressure of .60 under which pressure will you obtain the highest, most efficient and economical use of the gas?

A. Under the high pressure, under the .60 pressure, because you get a higher velocity of the gas and the more intimate aeration of the gas, and therefore a more complete combustion.

The tendancy at the present time is and for several years has been to use gas under a much higher pressure than formerly, this is the tendancy among gas men and engineers throughout the country, and the reasons are that the uses to which gas has been put have

changed so that at the present time gas is used for fuel or with burners having air mixture and all burners and appliances
710 are more efficient under high pressure than under low pressure. Brick from gas buildings could not be used or sold to go into any building that creosote which will get into the brick, and as a general proposition the brick, when the useful life of the building is over has no value whatever and the highest salvage value would be ten per cent. The tanks have no salvage value. The wrecking of the holder tank is a liability it costs 30c a yard to take up the brick and fill the hole, so there is no salvage, it would be an expense. Holders at the present day are made exclusively of steel, there is not two per cent. of cast iron in them. I have not been able to get any body to cut the rivets off the sheets and take it down, in other words, for the holder I could get no salvage. There might be a small salvage in the benches, but as a general proposition there is none. The water gas set would have a small salvage value, on my own estimate of depreciation I figured it at 12½ per cent. Cast iron pipe might have a salvage value under certain circumstances depending on where, the size what it would cost to get it out. In our own experience we usually let it lie—we usually have no salvage. I would say that it would not have any salvage value after 100 years.

The wrought iron pipe after its useful life is gone and the specials around the gas plant have no salvage value after services and meters have been used until their useful life is gone, they have no salvage value neither would are-lamps.

I think I used in my estimate 22 per cent for salvage on the yard connections, that is some of the larger ones—on the original estimate I put in here for depreciation in my pencil figures—I have a salvage allowed on every item except the rip rapping and tank.
711 Are lamps do not have a useful life in the gas business of twenty years. They are undergoing development, since they first appeared in 1901, the types have changed greatly and the arc lamp manufactured in 1901 cannot be put in the merchant's store today—he won't take it, you have to give him something more modern—the parts are very light, my judgment is that there would be no salvage in those lamps. We have not today a single one that we purchased six years ago.

Q. Assume that the benches of 9s were bought in the summer and installed in the fall of 1904 in this gas plant and that about August 1906 they were worn out and new ones had to be purchased in place of them and one was installed about that time and the others the following year, and suppose the method of charging for repairs was when they were made, then in that case would or would not it be proper to charge the year 1906 with this replacement of these benches.

Objected to as being incompetent irrelevant and immaterial, as not being rebuttal and on its face shows that it ought not to be charged until 6 months after the ordinance was passed. Taken subject to the objection?

A. Under that method of bookkeeping I should charge the material to whatever account for which it was purchased at the time I received the invoice, or at the time I paid the invoice. If the benches were worn out in August 1905 and 1906 it would be proper to charge the replacement of them to the gas that was made in wearing them out, under the system of bookkeeping you have stated.

712 Cross-examination:

In order to have the consumer economically use gas at the house it is necessary to adjust the burner when it is put up. Each burner should be adjusted when installed and afterwards, if necessary. It is not necessary to follow the variations in the pressure strictly in readjusting the burner because the burner itself will permit of considerable variation of pressure without affecting the efficiency. It is not practical to maintain a uniform pressure in such a system as this hardly. I think that with the Welsbach lamp the ordinary consumer knows there is a little lever on the burner for the purpose of adjusting it, and I think also that it is of common knowledge to users of stoves that the stove valves are adjustable. If an individual governor could be put on in a proper manner and maintained in a proper manner the gas company would have no cause for objection.

In the governor that is used at the works the regulation is accomplished by mercury float; those that are used inside the house have a governor that is usually operated by means of the ball floating on the water. The operation of the governor is the same but the mechanisms are different. In the design the house governor is calculated to maintain a uniform pressure at the outlet, and the station governor is calculated to vary the pressure at the outlet. The house governor is constructed to maintain a stationary pressure, and the station governor is constructed to vary the pressure. I estimated that in Cedar Rapids the individual governor, seal and labor would cost not less that $8.50, and in some cases you would have to provide for a saddle and tapping through the saddle, and my judg-
713 ment is that the cost would be more, rather than less than $8.50. The only governor we ever handled cost $5 10.

I am not opposed to efforts of the public to regulate rate of gas. I was the first person in the United States to deliver a paper before any public body advocating right of a community to regulate prices of gas.

Q. Didn't you say to Mr. Lazelle in substance, that you could make more if you would testify in behalf of the people, but you would not do it?

A. My statement was, that I could make more money traveling about the country telling half the truth and manipulating figures to misrepresent them in one year than I could by faithfully working for the gas company 25 years, and the statement was made of Mr. Bemis and all of his kind.

Q. You think your statement in reference to the rate the court should accept *is* fair and equitable?

A. I think the only doubt there is about it is as to whether it is

fair to the company; there is no doubt about the public. But I think that if prices are to remain where they are, the old rate of $1.15 is too low in 1907. I think if we had courts that could fix rates, I would have gone to the court for the year 1907 and asked it to raise it.

George B. Dutton.

The plaintiff then produced the above named witness, who being sworn testified as follows:

Direct examination:

I live in Cedar Rapids; am bookkeeper and cashier of the Cedar Rapids Gas Light Co.; have been with the company since February, 1907.

714 Q. What experience have you had in bookkeeping in Cedar Rapids?

A. I started to work for the gas company as meter reader and clerk, and worked in that capacity for a year; I was then at Exeter, N. H., for one year, and on my return I was employed by the Quaker Oats company, now American Cereal company. I was with them six months and was then transferred to a company controlled by the same people, named Douglas & Bros. & Moore, manufacturers of barley products. I stayed with them until 1896 when the business was sold out and a new business started. The firm was then Douglas & Co., and I had charge of their books in the Cedar Rapids plant, also of the general books. They operated a line of elevators in Dakota and Minneapolis. I was with them until 1901, when they sold out to the American Linseed Oil company. I was with them until the branch was closed and from there was sent to Dubuque and Des Moines to check inventories or bills they had purchased. Douglas & Company established a starch factory in Cedar Rapids in 1902, and I had charge of the books there until 1905. Since that I have examined and audited the books of the Cedar Rapids and Marion Telephone company, the Linn County Telephone Co., the Johnson County Telephone Co., and the Roy Pumping Register Co. of Rochester, N. Y.

The number of clerks in plaintiff's office are, one cashier and bookkeeper, who has general charge of the office, has charge of payment of bills and who assists in the general work of the office, and also assist in keeping the accounts of the customers; an assistant bookkeeper, who has charge of the customers' ledgers; a stenographer, who does the stenographic work and takes all orders for coke, sells all mantels and burners, and answers all telephone calls, also

715 makes out invoices of all materials sold outside of gas; one meter boy who reads meters, passes bills and collects bills for supplies that are sold, and he is assisted at meter reading time by students, which figures up two men for six days a month. The bills are made out by the bookkeeper and assistant bookkeeper and are made out monthly. The office is open from 7.30 in the morning to 6.00 p. m. We could not get along without every one of the office force, and in my judgment it is not larger than it ought to be. It is not larger than is necessary to take proper care of the business.

Mr. Glenn Averill is either at the office or at the works about the same hours that the rest of the force are at the office. He devotes his entire time to the business. Mr. A. T. Averill puts in considerable of his time at the office and visits the works practically every day.

There is such an item as $5,627.00 in the repair account for 1905. That is in lead pencil on the monthly balance book. That item has been on the book since the latter part of July, of this year; that was the time I first noticed it, which was prior to the time the city's experts saw the books.

I have made a computation from the books of the amount of gas manufactured during the last five years, and have a schedule of that computation which has been marked by the reporter Exhibit No. 57.

Q. You may state what the exhibit contains?

Objected to by defendants as being incompetent and immaterial and as not being rebuttal, the plaintiff already having put in their books. Testimony taken subject to objection. It is also agreed that this objection may apply to all questions touching Exhibit 57.

716 A. I got the figures from the books of the company that have been used in evidence in this case.

EXHIBIT 57.

Cedar Rapids Gas Light Company.

Cost of Gas for Five Years.

	Gas made.	Leakage.	Metered.
1902	54,164,930	4,637,130	49,527,800
1903	64,757,270	5,876,370	58,880,900
1904	73,430,630	8,225,230	66,205,400
1905	86,723,100	8,940,800	77,782,300
1906	100,764,000	8,457,900	92,306,100
	379,839,920	36,137,430	343,702,500
Less gas used at works and office for 5 years			5,331,500
Gas sold in five years (cubic feet)			338,371,000

Total cost	1902	$39,361.44
Less residuals	1903	55,425.56
	1904	54,979.25
	1905	67,183.46
	1906	77,210.29
Cost for 5 years, including int. 86.93c per M		$294,187.00
Interest five years		17,625.00
Cost for 5 years, excluding int. 81.64c per M		$276,562.00

I have taken from that amount for gas used at the works and office 5,331,500 cubic feet for the five years. In arriving at this amount I took the gas used at the office and works for the
717 years 1905 and 1906, and allowed the same amount for the previous years. The total sales for the five years amounted to 338,371,000 cubic feet. That is the amount of gas that was actually sold, during the five years, to the customers of the company and is shown by the books. The total cost less residuals sold for the year 1902 was $39,361.44; for 1903, $55,452.56; for 1904, $54,979.25; for 1905 it was $67,183.46, and for 1906 it was $77,210.29. The total cost for the five years less residuals, amounts to $294,187.00. This includes all interest paid during the five years. This makes the average cost for the five years 86.93c per M. c. f. The interest for the five years was $17,625.00, which would make the cost, excluding interest, 81.64c. All these figures I have given are taken from the books as made up prior to the time this suit was begun, except the estimate of the cost for 5 years and that I arrived at from the total schedule.

(Plaintiff offers in evidence Exhibit 57, which is objected to for the reasons stated in the last objection taken subject to the objection.)

I have examined page 2 (Ab. 519) of Exhibit "K-2" and find in that, the adjustment for leakage and gas used at the works is simply leakage account; there is no adjustment for gas used at the works or office, and that is true for the entire five years. I have also examined the schedule found on page 25 of Exhibit "K-2" (Ab. 521) with reference to the increase of gas sold during the months of April, May, June and July in the year 1907, over the same months of the year 1906, and I find that for the four months mentioned the gas sold in Marion was included in the gas sold in Cedar Rapids.

I have examined the schedule found on page 28 of "K-2" (Ab. 535) and find that, that also contains the gas used in Marion
718 for the four months mentioned, and is made on the assumption of an amount of gas that includes the gas used in Marion for those four months.

All the foregoing testimony relating to an examination of Exhibit "K-2" was objected to as incompetent, irrelevant and immaterial, and as not rebuttal and for the reason that if any discrepancy is contained in the report it could be shown by an exhibition of the books wherein the account is kept. The evidence was received subject to the objection.

Cross-examination:

I assisted in preparing the answers to the interrogatories as sworn to by Mr. Averill, and filed August 9, 1908, but not that part wherein is stated the cost per M. c. f. for manufacturing and distributing gas. I only found the cost of manufacturing and distributing for five years, that is the average for five years, and in arriving at this I took the total cost for five years and divided the total cost by the five years.

Q. Don't you know that the books you have in your possession

show that there is only $7,500.00 charged for depreciation during all the years in the history of the plant prior to 1902?

A. No; I didn't. Mr. Averill has some of his stenographic work in his private business done at the gas office; he dictates some of his letters to Mr. Rose, and Mr. Rose writes them and makes letter press copies of them, and I presume he does all the stenographic work for Mr. Averill in regard to the coal business, and his interests in the South and North.

719 I have examined the books of telephone companies in which Mr. Averill is interested and have been on friendly terms with Mr. Averill and his family for a number of years, and visit at his home.

I got the record of the gas used at the works and office for the years 1905 and 1906 and I took an average for those two years in arriving at the amount of gas used during the three prior years. There is no record of the gas used at the office and works for the years 1902, 1903 and 1904; I never made inquiry as to what was done with the records for those three years, if any was ever made. I don't think there is anything mysterious about the fact that no record was kept of the gas used at the office and works for those years.

Q. Don't you know as a matter of fact, that they had installed improvements at the works, so that they did not use the same proportionate amount of gas for 1906 that they used prior to that time?

A. No. If that is correct my estimate would be wrong.

The amount of gas sold to Marion for the month of January, 1907, according to Exhibit 26 was 453,100 cubic feet. This was the metered sales to Marion and Kenwood for that month; for the month of February, 1907, the book shows the amount of gas sold to Marion and Kenwood consumers to be 386,400 c. f. The book does not show the amount sold in Cedar Rapids for that month, but represents the gas that was metered. The first column for that month in Exhibit 26, represents 97,017,021, the total amount sent out, and 72,890,001 represents the amount registered on the consumers' meters including the gas company's. Those last figures under

720 the column "Metered Sales" are in my hand writing and are the sum of the addition of all the meters. That was done on the adding machine and the tape was thrown away.

Q. You mean to say that aside from the gas used at the office and the works that the leakage for 1907 was 20.7 per cent for the month of February?

A. Yes, sir. In the month of March, 1907, the metered sales to Marion were 379,800 and the metered sales to Cedar Rapids were 8,403,800, including the gas used at the office and works. For the month of April, 1907, the gas sales for Marion were 423,500 cubic feet, and the figures 8,957,600 cubic feet represents the total sales for Cedar Rapids and Marion, and includes both cities. For the month of May, 9,713,500 includes the sales both at Cedar Rapids and Marion also. The figures with reference to the month of gas are inserted in the book, Exhibit 26, as soon after the first of the month as we get all the meter readings, and the reason why we haven't made

the entry for the month of November, 1907, is because we haven't had the books to make up the record, and the same reason applies for not inserting the amount of gas used at Marion for the month of October, 1907. The ribbons which are used in the adding machine in making up the total for the month, are not retained as they are strips of paper about 20 feet long.

Q. There would be no way to go back now to ascertain for the months from January to July, whether these figures you have given for the total sales are correct or not?

A. No, sir. The evidence of the correctness of these figures have been destroyed.

Q. I call your attention to the item on page 14 of "K-2"
721 (Abs. 523), "Leakage including gas used at the works for 1902, 4,646,700 c. f.; for the year 1903, 5,876,370 c. f.; for the year 1904, 8,225,230 c. f.; for 1905, 11,786,680 c. f., and for the year 1906, 13,657,640 c. f., and call your attention to Exhibit "A," of Exhibit "K-2" (Ab. 537), and ask you to state if that is not included right at the bottom of the report?

A. The gas used by the company is not included in that report of leakage; it pretends to show it, but does not. I said the leakage for 1902 was 4,637,130 and Mr. Hall has given it in his report 46,464,071, and for the year 1906 he has given leakage including gas used at the works at 13,657,640 c. f., and the same year I give leakage 8,457,900 c. f. The difference is not gas used at the works and office. Mr. Hall's table starts wrong and ends wrong. Mr. Hall took the statement without the correction of the meter. I took the statement with the meter corrected. The records Exhibit 26, as corrected, show 92,300,100 feet of gas manufactured for Cedar Rapids and 1,473,200 feet for Marion. For the month of June 1907, the total make was 9,555,130 cubic feet and the sales including gas used at the works and office and Marion were 8,730,200. The change in the method of keeping this record was made in April. The April figures were put in the book in the early part of May and was put in by Mr. Averill. I made the figures up about that time and I presume they were inserted in the book then.

The books kept for the sales at Cedar Rapids are entirely separate from those kept for the sales at Marion. The books for Marion and Kenwood Park are similar to those for Cedar Rapids, but they are separate books. The Marion tapes from which I get the amounts of metered sales, are made up separately and distinct from Cedar
722 Rapids tapes, and after the amount is ascertained those are also destroyed.

Q. Who first called your attention to the fact that the Marion sales were included in the monthly statement?

A. Mr. Gillespie, one of the auditors for the city, when he was examining the books.

Mr. Ed. M. Scott secured my services in an examination of the Cedar Rapids and Marion Telephone Company's books; he is president of that company.

Glenn M. Averill—Re-called by the Company.

Direct examination:

I did not tell Mr. Hall that the corrections made on the book, Exhibit 26, for the years 1905 and 1906 were corrections for temperature, there are no corrections in that book for temperature. The corrections for temperature are made on the daily report before they are carried into this book. To explain how this correction is done, it is from the reading of the thermometer whose bulb is in the flow of gas; the record is taken with the reading of the meter and if that temperature is above or below 60 degrees the comparative amount of gas that has passed through the meter has to be corrected to the amount that it would have registered if it had passed through the meter at a temperature of 60 degrees. The meter was running fast in 1907 up to the time we made the test in June, and the correction has not yet been made on the book, Exhibit 26, because for 1907 it has not been completed and put in there as a total. I simply make the correction for the year. I think I made the most of the entries in the book Exhibit 26. I made that book and kept it for
723 my own information. The figures that are entered in it, were given to me by the bookkeeper on a slip—sometimes the end of the ribbon showing the total of each of the consumers' ledgers. Sometimes they add up the seven books on one piece of paper and give it to me as the amount of gas metered, and the other figures I get from my own record. When I get the additions handed me by the bookkeeper I enter them in the column headed "Meter Sales" and make the comparisons and represent the leakage. I enter the figures correctly as they are given to me by the bookkeepers. The column "Meter Sales" includes the gas used at the office. It is the sum of all the meters in town. The object of my keeping that book is to keep track of the manufacturing and leakage, and in order to get the leakage, everybody's gas metered must be included in that sum whether it is paid for or not. As soon as the additions are made they are collected and put into this book.

All coal bought by the company is bought at mine weights, and is paid for according to mine weights. For many years all the coal we purchased was weighed on the railway track scales in front of our works and the weights were turned over to us; that has not been done lately because the scales have not sufficient capacity to weigh the larger cars. There is always a shortage in the destination weight. The destination weight is always less than the mine weight, from 1,500 to 2,000 pounds per car. The freight bills are usually 1,000 pounds less than the mine weights because they recognize the shrinkage in special mined coal.

The lamp brought in court by Witness Ely, is a Block inverted lamp; the company does not recommend the use of that lamp—they do not consider it a good lamp.

724 I have made some photometric tests to determine the candle power of various lamps and with reference to the cost of the light per candle power. The results of these tests is as shown

on the schedule I have prepared and had marked Exhibit No. 58 (Ab. 247). These tests were made with a Barr Photometer, comparing each kind of light with the standard candle power which is used in testing the candle power of gas. Two different makes of new incandescent electric lamps, each branded 16 candle power, were tested. The watt consumption of these lamps had been given us by the electric light people who have an arrangement for testing, for computing the amount of current consumed. We didn't do that on our machine. In this test I figured the price of electricity at 19.9c. per thousand watts, which is the price charged by the electric company, and we figured gas at $1.15 per M. c. f. and figured oil at 13c. a gallon. We went to a grocery store and bought a gallon of oil for 13 cents to make the test with and bought candles at the rate of 20c. a pound. The electric lamps gave 10 candle power on a consumption of 65 Watts per hour, made the cost of 100 candle power of that kind of light per hour 12.35c. Using sperm candles at 20c. a pound, each candle burning 8 hours, made the cost of 100 candle power per hour 13.25c. The kerosene oil was 13c. a gallon. The lamp used was one that was all cleaned up, and had a clean chimney and a No. 1 wick in it. The kerosene lamp gave 9 candle power. We burned the kerosene at the rate of 5½ ounces of oil in seven hours, which made the cost of 100 candle power of that kind of oil per hour .97c. Gas was rated at $1.15 per M. c. f. The test was made with a vertical Welsbach lamp consuming 4 feet of gas per hour, giving 100 candle power and the cost of gas per hour was .0046c. The tests were correct. We made eight or ten tests on every lamp.

725 (Plaintiff offers in evidence Exhibit 58, which is objected to by defendants as not rebuttal and having no bearing on this case. Taken subject to objection).

In my opinion Mr. Rose does not write to exceed three or four letters a day for Mr. A. T. Averill on his private business. When the land company had considerable business a few years ago, they paid $25.00 a month of the stenographer's salary; in the last years they paid $10.00 or $15.00 but have not paid anything for some time.

I think we can get more light for the money from gas than from kerosene. The object of preparing Schedule 58 was to show that gas was the cheapest illuminant.

Edward G. Pratt—Recalled by Plaintiff.

Direct examination:

In my judgment the repair of the benches should be charged to the year in which the repairs and renewals were made. The portion of the repairs that were purchased in 1906 should be charged in the year in which they were delivered. But if they were not completed and whenever the work of resetting or setting these retorts is done it should be charged for in the year in which the

work was performed. It should certainly be charged in the year's business in which the setting was performed.

I have made a computation of the cost of pipe, based on the prices of the last three years, on the estimate furnished by Mr. Fox in this case. The kind of pipe Mr. Fox included in this Exhibit—has not been given, and I have taken the price he gives per ton from April, 1904, to October, 1907. The average price as given by him is $30.65 a ton for water pipe. He or Prof. Bemis made the statement that gas pipe costs $1.00 a ton more than water pipe. This
726 would make it $31.65 and Mr. Fox added that four inch pipe would cost $1.00 a ton more than other sizes, and inasmuch as a large portion of the company's pipe is larger in size it would make the pipe $32.65 for four inch pipe, which was the price I used in my valuation of the plant.

If I had to use the present market value of pipe, $37.00, instead of the price which I did use, to-wit, $32.50, the pipe in the yards would increase my figures from $589.00 to $692.24 for the yard connections and if the same increase, which is 14 per cent., were applied to the cast iron street mains, my price would be increased by $5,539.80. If the present prices of wrought iron pipe were to be applied to my estimate, my figure on that pipe would be increased by $7,851.99, or a total increase in the valuation of the mains and cast iron pipe of $13,702.07. The same would apply to services if the present prices were to apply instead of the prices allowed by me; that is the difference between .1182c. and 10c., my estimate for service connections would be increased $9,456.00, making a total increase of $23,858.07. When I say present prices I mean market value.

(The foregoing testimony in relation t price of pipe was objected to on the ground that it was not rebuttal but an argument taken from the facts testified to in this case and as incompetent, irrelevant and immaterial, but the evidence was taken subject to the objection).

I observed the black material in the bowl of the lamp brought into court by the witness Ely. There was nothing that indicated to a man who knows anything about the gas business that foul gas was burned in that burner. I could discover nothing but
727 some unconsumed carbon and portions of the mantel; a test would have proven in that burner an accumulation of this unconsumed carbon. The regulation of the mixer, or a proper mixing of the air and gas was all that was required.

Glenn M. Averill—Recalled by Plaintiff.

I have prepared a schedule from the books of the company showing the consumption per meter during the last ten years. This statement is marked Exhibit 60 and shows the meter sales for each year. The number of meters in use, and the net price of gas for that year. The statement was prepared by myself and is correct. It is marked Exhibit No. 60. This schedule was made up to show the average

consumption by domestic consumers, and the gas that was used by the American Cereal company is excluded, and is the only thing that is excluded.

"EXHIBIT 60."

Consumption of Gas per Meter.

Year.	Sales, cu. ft.	Number of meters.	Consumption per meter, cu. ft.	Price.
1897	20,899,200	1085	19,260	$1.25
1898	25,768,300	1319	19,536	1.25
1899	30,000,000	1497	20,040	1.25
1900	34,680,100	1638	21,172	1.25
1901	38,530,600	1871	20,593	1.25
1902	49,527,800	2109	23,503	1.25
1903	58,880,900	2336	25,205	1.25
1904	65,205,400	2600	25,080	1.25
1905	77,782,300	3309	23,509	1.15
1906	91,732,600	3736	24,550	1.15
8 Months 1907	62,153,300	3967	23,514	1.15

728 All the evidence relating to Exhibit 60 and the exhibit, was objected to as not being rebuttal and as incompetent and immaterial, but was taken subject to the objection.

Exhibit No. 61 shows the amount of the inventories for the materials taken on the 31st of December of the years 1901, 1902, 1903, 1904, 1905 and 1906, and was gotten from the books of the company and was taken from the books that have been introduced in evidence.

Plaintiff offers in evidence Exhibit 61 which is as follows:

EXHIBIT 61.

	1901.	1902.	1903.
Gas	$5,735.00	6,508.50	7,850.00
Coke	3,188.71	1,691.00	4,555.00
Fitting	3,280.44	2,454.36	2,520.22
Tar	134.00	499.25	324.00
Accounts receivable.	121.32	10.95	82.86
Cash	16.64	1,070.39	221.03
Gas coal	.....	.....	1,064.52
Gas oil	.....	.....	.....
	$12,476.11	12,234.45	16,617.63
Due creditors	2,814.71	2,037.87	9,263.11
	$15,290.82	14,272.32	25,880.74

	1904.	1905.	1906.
Gas	8,498.50	9,827.00	5,590.00
Coke	3,950.00	5,920.00	2,406.00
Fitting	3,163.00	2,423.13	1,652.36
Tar	469.00	166.75	353.80
729			
Accounts receivable.	17.13	47.74	924.84
Cash	610.63	320.80	400.67
Gas coal	.....	.....	.....
Gas oil	314.49	.....	.....
	$17,022.75	18,705.42	11,327.67
Due creditors	4,031.68	12,540.75	8,067.52
	$21,054.43	31,246.17	19,395.19

I made this exhibit last Monday from the ledger and trial balance books. The ledger shows how much tar we had on hand, how much fittings we had on hand and the materials that were unpaid for. It shows the totals of these items; there is no dividing up, it is put in just as it is here. It would be impossible to get the individual items, the number of tees and ells and plugs. I took the totals from the account just as it was made. There is no inventory on the books; that is the books do not show the number of caps, ells, etc. It shows the gas that has been sold and is unpaid for or bills receivable. The individual consumers do not appear on the general ledger—it is there in a lump sum just as it appears on this sheet. I have not put down bills payable because they do not enter into our working capital. The purpose of Exhibit 61 is to show fully the material we have on hand at the end of each year.

James Hall—Recalled by Defendants.

Direct examination:

In my experience as an accountant I have never known a company to practice the destroying of the tapes containing the footings of the adding machines of the consumers' ledgers, such as was
730 testified to here by Mr. Dutton. In my experience the tapes have always been preserved, and they should be preserved that a check could be made in the consumers' ledgers; the tape should be kept and copied on the ledger and then you could check back if anything goes wrong; where the tap-s have been destroyed it is impossible to make a check. I was in court when Mr. Dutton testified yesterday and heard his statement regarding the Exhibit "K-2," and as to leakage, so far as the final result is concerned, in dollars and cents, it would make no difference whatever, whether the amount of leakage is increased or reduced there because if the account of leakage is reduced it increases the cost of manufacture and if that is reduced it decreases the cost of distribution. The combined cost of manufacture and distribution is the net cost.

I was present when Mr. Pratt testified with reference to the repairs of these benches, and the allowance made by me of 5.67c per M. c. f. of gas sold was intended by me to cover the cost of making these repairs for 1907, and I had those benches in view when I made the allowance. I have prepared a statement and schedule showing what difference it would make in the final result which I have reached, as shown on page 29 of Exhibit "K-2." If the sales for Marion for the months of April to August were not included and assuming that Mr. Dutton is correct and that an elimination should be made. The schedule prepared by me is marked Exhibit "F-3."

EXHIBIT "F-3."

Schedule of changes necessary in Exhibit "K-2" on assumption that after the months of April to August, 1907, include those to Marion consumers.

731 Marion consumptions are as follows:

	Cubic feet.
April	423,500
May	493,000
June	516,700
July	588,800
August	638,800
Total	2,660,800

Deducting from the sales as reported, we have reduced sales amounting to 103,079,190 cubic feet. At an average profit per M. c. f., the profit for 1907 would be $26,759.35

Divisible thus:

Bond interest on.....	$75,000	at 5 per cent..	$3,750.00
Return on capital investment of	269,841	at 8.53 per cent..	23,009.35
	$344,841		$26,759.35

This balance is equal to 15.34 per cent. of the capital stock of the company.

On the assumption that a deduction should be made on account of the sales to the consumers in Marion for the five months of April to August, which would amount to 2,660,800 c. f., that amount deducted from the sales reported in Exhibit "K-2" which is 105,739,990 c. f., would leave the Cedar Rapids sales 103,790,190 c. f. at an average profit per M. c. f. of 25.96c for 1907, would be $26,759.35. The return on the capital invested of $269,841.00 and the $75,000 in bonds is $23,009.35, that is equivalent to a return of 8.53 per cent. on $269,841.00. That divided by $23,009.35 is equal to a
732 return of 15.34 per cent. on the capital stock of the company of $150,000.00. It may be that Mr. Dutton's statement with

reference to these gas sales to Marion for April to August, 1907, inclusive, are correct, but I don't think so, because the account with Marion prior to April has been kept separate and distinct on the record books.

Defendants now offers in evidence "Exhibit F-3," which is objected to as incompetent, irrelevant and immaterial, the whole computation being based on the assumption of facts not established. Taken subject to the objection.

From the month of August, 1906, the practice of the company was to enter the Marion and Cedar Rapids sales of the company quite distinct and the difference taken from the aggregate of the sales, taken from the send out and given to the totals for the year, you find the total sales at Marion and the sales at Cedar Rapids do not agree with the leakage. The practice was followed up to March and then it was switched onto the yearly sales. There is a variation in the method of treating this book and the fair assumption is that the method adopted at the start is carried out. All I have said with reference to what was done by the company, I have found by an examination of the red book marked Exhibit 26.

EXHIBIT "D-3."

Showing all the paving laid in the City of Cedar Rapids, the date when laid and kind of paving.

Streets and Avenues Paved.

1890. 15 blocks brick; brick foundation.
1891–2. 26 blocks brick, brick foundation.
1894. 13 blocks brick, macadam foundation.
733 1895. 4 blocks brick, macadam foundation.
1896. 67 blocks brick, macadam foundation.
1897. 17 blocks brick, macadam foundation.
1898. 18 blocks brick, macadam foundation.
1899. 3 blocks asphalt, concrete foundation.
1901. 28 blocks asphalt, concrete foundation.
1901. 7 blocks brick, macadam foundation.
1902. 4 blocks asphalt, concrete foundation.
1903. 28 blocks brick, macadam foundation.
1903. 6 blocks asphalt concrete foundation.
1904. 4 blocks brick, macadam foundation.
1905. 9 blocks brick, macadam foundation.
1906. 27 blocks brick, macadam foundation.
1907. 20 blocks brick, macadam foundation.
1901–1903. 65 blocks macadamized streets.

Alleys Paved.

1891. 29 blocks brick, macadam foundation.

Cross-examination:

Q. Is it not apparent from Exhibit 26, by the simple process of addition and subtraction to tell whether the Marion gas is included in these items?

A. No, sir.

For the month of August, 1907, the total send out is the sum of 9,340,900 c. f. The meter sales are in two sets of figures; one is 8,459,800 and the other 638,800.

Q. The leakage is marked 575,100. Now can't you tell by the simple process of addition and subtraction whether the 638,800 is included in the 8,459,900?

A. There is nothing to indicate it there. Deduct the meter
734 sales from the send out and you get the leakage. The total send out is 9,034,900 c. f.; the meter sales are 8,459,800 c. f., and the difference is 575,100. And assuming that the figures for the send out is 9,034,900 and the figures 575,100 are correct for the leakage, the 8,459,800 c. f. is the total amount of gas metered and you could figure any other month out the same way from the books.

Objections to Evidence.

At the time the witness, Edward W. Bemis, was giving his testimony in relation to the cost of gas the following question was put to said witness, the objections made and agreement entered into by the parties.

Q. I now call your attention to page 15 of Exhibit "K-2" and particularly to the schedule showing the average cost for 5 years ending December 31, 1906, of gas to the consumers of plaintiff at 61.01c. What have you to say, professor, with regard to whether or not the conclusions there reached from the books of the company are reasonable or unreasonable.

Objected to by plaintiff as being incompetent, irrelevant and immaterial and calling for an improper and immaterial method of getting at the price of gas and further that the question requires the witness to enter into a lengthly discussion of what he may consider it to be from statistics and authorities on the cost of gas, and further it has not been shown that the witness is a practical gas man or gas engineer but his knowledge is purely professional and theoretical. The testimony taken subject to the objection.

It is agreed that all of the answers of this witness and the several parts thereof shall be taken subject to the above objection and
735 to the further objection that wherever or whenever the witness shall, in answer to any question, refer to what he calls authority or quotes from other persons on the subject from papers, charts, or books and documents, it is hearsay and incompetent. It is conceded and agreed that any testimony offered by this witness is objected to as being incompetent or hearsay and on the ground that the witness is not qualified and it is agreed that this objection shall stand to all of this witnesses testimony.

At the time the witness, Alton D. Adams, was on the stand and was being examined as to the life of the machinery, apparatus, build-

ings and mains of plaintiff the evidence of said witness was all objected to on the ground that said witness had not shown himself competent to testify as to the life of buildings or any other machinery or apparatus entering into the gas works of plaintiff and the evidence was taken subject to the objection.

That at the time the witness, James Hall, was on the witness stand and was being examined with reference to the books of plaintiff and as to the method of keeping such books, the said evidence was objected to on the ground that the same was incompetent and immaterial and that the witness is not competent to answer the questions and does not know what goes into the manufacture of gas, and the said testimony was taken subject to said objection.

That at the time the witness, James Hall, was on the witness stand and was being examined with reference to the question of depreciation of plaintiff- property and the amount that should be allowed on that account in arriving at the cost of gas, and of the
736 proper items that should be allowed for depreciation, renewals and repairs. The said testimony was objected to as incompetent and for the reason that the witness is not competent to answer the questions and it is not shown that the witness has had any experience as a gas engineer or a gas plant operator, and that he has not shown that he was ever engaged in conducting a business of this character, and the evidence was taken subject to said objections.

That at the time, the exhibit "K-2" being the audit of the plaintiff's books, by the witness, James Hall, was offered in evidence, the following proceedings were had in addition to those heretofore set out in this abstract, to-wit:

"The defendants now offer in evidence Exhibit "K-2," being the report of the witness, James Hall. Plaintiff objects to the introduction of Exhibit "K-2" on the following grounds:

First. That the exhibit is not a schedule and report of an examination of the books of the plaintiff alone, and it does not present an accurate summary and explanation of the books of the company but is made up from striking out a large number of items found on the books and the introduction of other items and charges not found in the books.

Second. That the exhibit is based on conclusions and opinions in reference to matters of gas engineering and practical gas operations which the witness who has prepared the exhibit is shown to be incompetent to give.

The plaintiff also moves to strike out of the exhibit "K-2" all references in said report to the affidavits submitted by the
737 plaintiff for the reason that it is not the province of an expert accountant in making an audit of the books to criticise other evidence introduced upon the trial.

Plaintiff moves to strike out "conclusion 2nd" for the reason that it is province of the auditor of the books to set forth what they show and not to offer opinions and advice as to what they ought to show. Plaintiff moves to strike out "3rd conclusion" found on page two of the report for the reason that the conclusion is not based on the actual cost of manufacturing and distributing gas and is not based

on the proper computation as to leakage, not taking into consideration the corrections of the meter.

Plaintiff moves to strike out "Conclusion No. 4," as incompetent, irrelevant and immaterial and as seeking to substitute the opinion of an accountant for the conclusion which the court is required to arrive at in the final determination of the case.

Plaintiff moves to strike out the statement found on bottom of page 3 (Ab. 520), beginning with the words, "we might explain," as being incompetent and the mere opinion of a person not qualified to give an opinion as to the scientific basis of depreciation.

Plaintiff moves to strike out the text found on page 25 near the bottom of the page, as argumentative and not a report of the condition of the books but as being based on hearsay evidence so far as any statement of fact is claimed to be made and is incompetent, irrelevant and immaterial.

The plaintiff moves to strike out the text beginning under "(*b*)" on page 26 (Ab. 534) of the report and the table in connec-
738 tion therewith, for the reason that the same is incompetent, irrelevant and immaterial, hearsay, argumentative and not a statement of any facts based on an examination of the books. The plaintiff moves to strike out the paragraph marked "(*c*)" on page 26 and continuing on pages 27, 28 and 29, as being incompetent, irrelevant and immaterial and hearsay. Plaintiff moves to strike out Exhibit "A" of said report and all the figures purporting to show the cost of the manufacture of gas for 1902, 1903 and 1904, for the reason that the witness confesses that he has obtained no accurate or satisfactory data upon which to base any such conclusions and for the further reason that the introduction of the figures for those years into the case furnishes the means of making out a material reduction of the cost for the years 1905 and 1906, when it does appear from the evidence in the case that the cost of the manufacture of gas for those two years has been increased by increased cost of labor and material. Plaintiff makes the same motion in regard to page 2 of Exhibit "A" of said report.

Plaintiff moves to strike out Schedule "I" as having no proper place in this report because it is a copy of testimony already in the case. Also Schedules 2, 3 and 4 for the same reasons.

Plaintiff moves to strike out all of the schedules attached to the report and all the figures set for- therein with reference to the business of the company for 1907, for the reason that the same is incompetent, irrelevant and immaterial, the business of 1907 not being properly considered in this case on account of the fact that the ordinance took effect in January of that year. The testimony taken subject to the objection.

That each of the exhibits set forth herein were duly offered
739 by the respective parties and duly received by the court as set forth herein.

Evidence closed for both parties.

That at the close of the testimony for all the parties there was made and duly attached to the shorthand reporter's notes, the following certificate:

Now, to-wit, this 21st day of December, 1908, we, F. O. Ellison, sole judge presiding on the trial of the above entitled cause, and H. H. Burr, official reporter for said court, and being at the conclusion of the trial of said cause, do hereby certify that the foregoing is the shorthand official report of the above entitled cause; that it contains together with the exhibits and documentary evidence therein referred to, all the evidence offered and all the evidence introduced on the trial of said cause, together with the objections of the parties to the introduction of evidence, the rulings of the court thereon and the exceptions of the parties to such rulings as fully and to the same effect as said evidence, objections, rulings and exceptions were introduced, had and taken at the trial of said cause, and said official report contains a full, true and complete report of all proceedings had upon said trial required to be kept, and is hereby signed by us and certified to and ordered filed, and made a part of the record in this cause.

H. H. BURR.
Official Reporter Eighteenth Judicial District, Iowa.
F. O. ELLISON.
Judge Eighteenth Judicial District, Iowa.

That the said shorthand reporter's notes so certified and the
740 certificate attached thereto, were duly filed in the office of the clerk of the District Court of Iowa, in and for Linn county, and the whole of said evidence became a part of the record in said cause, within six months from the date upon which the said trial was concluded and judgment entered in said cause. That a true and correct translation of said shorthand notes was made and filed in said cause within six months after judgment and decree was entered therein as required by law, and all the said evidence had upon said trial was duly and properly made a part of the record therein within six months after judgment was entered therein.

That the trial of this cause was begun on the 14th day of November, 1907, and proceeded from day to day until the 21st day of December, 1907, at which time it was taken under advisement, and on the 30th day of January, 1908, there was filed in this cause and made a part of the record herein the following:

In the District Court of Iowa in and for Linn County.

THE CEDAR RAPIDS GAS LIGHT COMPANY, Plaintiff,
vs.
THE CITY OF CEDAR RAPIDS, IOWA, et al., Defendant.

Finding and Judgment.

By agreement of the parties to this action made in open court at the November term, 1907, this cause was tried at Cedar Rapids, Iowa. That the trial of said cause was begun on the 14th day of November, 1907, and continued from day to day up to and including the 21st day of December, 1907.

And now, to-wit, on the 30th day of January, 1908, after carefully weighing and considering all the facts and circumstances in evidence and the arguments of counsel, the court finds and determines,

741 First. That the city council of the city of Cedar Rapids, Iowa, has power and authority to regulate and fix rates to be charged for gas sold within the corporate limits of said city; that said city council investigated and determined as to the rates and charges to be fixed before Ordinance No. 752 was adopted and passed by said council on the 21st day of December, 1906.

Second. That the evidence fails to show that the rates fixed by Ordinance No. 752 are unjust and unreasonable, or that the enforcement of said ordinance would be equivalent to the taking of plaintiff's property for public use without just compensation, or that it would deprive the plaintiff of its property without due process of law, or that it is confiscatory in its effects, or that the enforcement of said ordinance will deprive the plaintiff of any of its constitutional rights. And the court further finds from the evidence that the rates fixed by said ordinance are just and reasonable and that said ordinance is valid and should be sustained.

The temporary injunction heretofore granted is dissolved and the plaintiff's petition is dissolved and the plaintiff's petition is discussed and judgment and decree accordingly.

Judgment against the plaintiff for costs. To all of which the plaintiff excepts.

F. O. ELLISON, *Judge.*

That judgment was duly entered against the plaintiff and in favor of defendants on the 30th day of January, 1908, dismissing plaintiff's petition and for costs against plaintiff, to all of which the plaintiff duly and properly excepted of record at the time, and the said judgment and said exceptions were duly made of record in this cause.

742 The above and foregoing Abstract of Record contains all the pleadings of the parties and exhibits attached thereto, all the evidence offered and all the evidence introduced on the trial of said cause together with the objections of the parties to the introduction of the evidence, the rulings of the court thereon and the exception of the parties thereto and the same is a true and correct abstract thereof.

JOHN N. HUGHES AND
J. H. TREWIN,
Attorneys for Plaintiff.

To John M. Redmond, J. W. Good, J. W. Jameison, and H. E. Spangler, Attorneys for Defendants:

Please take notice that the plaintiff will argue the above case orally in the Supreme Court, upon the submission thereof.

JOHN N. HUGHES AND
J. H. TREWIN,
Attorneys for Plaintiff.

We hereby certify that the cost of printing the above and foregoing Abstract of Records was $930, computed in accordance with the rules of this court.

JOHN N. HUGHES AND
J. H. TREWIN,
Attorneys for Plaintiff.

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765 In the Supreme Court of Iowa, September Term, 1908.

In Equity.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant,

vs.

THE CITY OF CEDAR RAPIDS, IOWA; GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen, and with the Mayor of said City and H. S. Keffer, Recorder, Appellees.

Appeal from Linn District Court.

Hon. F. O. Ellison, Judge.

John N. Hughes and Grimm & Trewin, and J. H. Preston, Attorneys for Appellant.

J. W. Good, J. W. Jamison and H. E. Spangler, and John M. Redmond, Attorneys for Appellees.

Appellant's Amendment to Abstract of Record.

Due, timely and legal service of the within Abstract of Record is hereby acknowledged this — day of ——, 1908.

——— ———,

Attorneys for Appellees.

766 Appellant amends its abstract of record filed herein by adding thereto the following:

Notice of Appeal.

That on the 30th day of January, 1908, the plaintiff perfected its appeal to this court by serving upon James W. Good, E. H. Spang-

ler, and J. W. Jamison, attorneys for the defendants, and upon defendants, and upon H. C. Ring, Clerk of the District Court of Iowa, in and for Linn county, a good and sufficient Notice of Appeal, appealing from all of the rulings of the court including the decree and judgment entered therein, and duly filed said Notice of Appeal in said Clerk's office.

The above and foregoing Amendment to Abstract of Record, together with the Abstract of Record contains all the pleadings of the parties and exhibits attached thereto, all the evidence offered and all the evidence introduced on the trial of said cause, together with the objections of the parties to the introduction of the evidence, the rulings of the court therein and the exception of the parties thereto and the same is a true and correct abstract thereof.

JOHN N. HUGHES AND
J. H. TREWIN,
Attorneys for Plaintiff.

We hereby certify that the cost of printing the above and foregoing Amendment to Abstract of Record was 82 computed in accordance with the rules of this court.

JOHN N. HUGHES AND
J. H. TREWIN,
Attorneys for Plaintiff.

767 In the Supreme Court of Iowa, January Term, 1909.

In Equity.

CEDAR RAPIDS GAS LIGHT CO., Appellant,
vs.
CITY OF CEDAR RAPIDS et al., Appellees.

Appeal from Linn District Court.

Hon. F. O. Ellison, Judge.
John N. Hughes and Grimm & Trewin, For Appellants.
Redmond & Stewart & J. W. Good, For Appellees.

Amendment to Abstract.

Appellant amends its abstract herein by setting out the following evidence, in addition to the evidence now contained in the abstract to-wit:

768 *Glenn M. Averill.*

Cross-examination:

Q. You say those 4 purifiers were taken out and sold when the new ones came in?

A. They were taken out as soon as the new ones could be put in use.

Q. I understand you to say that they were taken out and sold for old junk?

A. They have since been sold, they were sold this year.

Q. They are included in the inventory though?

A. Yes, sir, at $1,600.

Q. And depreciation being charged off at the rate claimed by you?

A. They were there at the time that he took the inventory.

Q. It is contained on page 12 of Pratt's exhibit $1,600.00 that is the item?

A. Four 10x12 purifiers, yes, sir.

Q. What did you get for them?

A. We got that elevator and iron floor down there.

Q. That is in the inventory here is it not?

A. No, sir: The Trade was made just a little while ago, we traded with Mr. Carmody for some stuff that went back to the plant.

Q. There was no price put on it in dollars and cents, it was not a cash transaction.

769 A. No, sir. There are a lot of cast iron plates down there.

Q. The cash item that went into this transaction wasn't included in this inventory at all?

A. That elevator that goes up to the water gas plant, that was not there at the time the inventory was made. The boxes were included in the inventory but not the material that they were traded for.

Transcript Vol. 4 page 1540 Et. Seq.

Q. Now these new boilers you got of Mr. Carmody, came from the American Cereal Company?

A. Yes, sir.

Q. Mr. Carmody was the purchaser of the junk there was left after the fire?

A. Yes, sir.

Q. And these boilers he removed and took them to his place and traded them to you?

A. Yes, sir.

Q. You paid him how much difference in cash, including the boilers you surrendered?

A. I don't remember the amount that went to him but the boilers cost something like $1,400.00 in addition to what we gave him and he gave us some connections.

Redirect examination:

Q. Were the boilers injured at all in the fire?

A. No, sir: They were not in the fire. They were taken out by the American Cereal Company, because when, they, the company, rebuilt after the fire they discarded their rope transmis-

770 sion to electrical transmission and reduced their horse power and reduced their boiler capacity, and they had no further

use for one boiler house and they tore down one boiler house and one stack. The boilers were in perfectly good condition.

Transcript, Vol. 4, page 1620.

Appellant also adds to its abstract of record the following plat of its premises, and ground upon which the plant is located.

We hereby certify that the above is a true and correct copy of parts of the evidence in the above entitled cause and together with appellant's abstract and amendments heretofore filed constituted all the evidence offered or received upon said trial.

JOHN N. HUGHES AND
GRIMM & TREWIN,
Attorneys for Appellant.

(Here follows diagram marked page 771.)

MAPS

TOO

LARGE

FOR

FILMING

772 Service of the within denial of and amendment to the abstract of record is hereby accepted and copies received at Cedar Rapids, Iowa, this — day of December, 1908.

—— ——,
Attorney for Appellant.

In the Supreme Court of Iowa, September Term, 1908.

In Equity.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant,
vs.
THE CITY OF CEDAR RAPIDS, IOWA; GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell; W. H. Stepanek; J. H. Hughes; W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. C. Barta, D. Feiereisen, and J. K. Starman, Aldermen, and with the Mayor Constituting the Council of said City, and H. S. Keffer, Recorder, Appellees.

Appeal from Linn District Court.

Hon. F. O. Ellison, Judge.
John N. Hughes and Grimm & Trewin, Attorneys for Appellant.
Redmond & Stewart & F. C. Byers, James W. Good, J. W. Jamison, and H. E. Spangler, Attorneys for Appellees.

Denial of Appellant's Abstract and Amendment to Abstract of Record.

773 Denial.

Come now the appellees and deny that appellant's abstract of the record filed herein is a full, true, correct or fair abstract of the said record. They deny that the said abstract fully, truly, correctly or fairly sets forth the record necessary to a right determination of the matters involved in this appeal, and appellees make the following specific denials of appellant's abstract of the record:

First. Appellees deny that appellant's abstract truly, correctly or fairly sets out the pleadings filed in the court below in this cause. That the said pleadings have been incorrectly abstracted in the following particulars, to-wit:

(*a*) Strike from appellant's abstract of the pleadings on the bottom of page 9 of the said abstract, the following: "That the said proposed ordinance fixing the rates for gas, passed December 21, 1906, if put in force and enforced will work a reduction of more than 25 per cent. of plaintiff's gross income," and substitute in lieu thereof the following:

"That the said proposed ordinance fixing the rates for gas, passed December 21, 1906, if put in force and enforced will, at the rates therein specified, work a reduction of more than 28 per cent. of plaintiff's gross income."

(*b*) Strike Section 3 of Exhibit B attached to appellant's petition in equity (Abs. 14), the same reading as follows:

"That in consideration of the privileges herein granted
774 to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more cubic feet per month the discount shall be 45 cents per thousand cubic feet for all purposes if paid on the same terms and conditions above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city offices the price shall be 10 cents per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

Substitute in lieu of the above the following, which is set out in the said Exhibit and attached to the plaintiff's petition:

"1186. Price, Sec. 3. That in consideration of the privilege herein granted to said company, it shall furnish to the inhabitants of said city, gas for lighting at a price not to exceed $1.80 per thousand feet and 20 per cent. per thousand feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more feet per month, the discount shall be 45 per cent. per thousand feet for all purposes, if paid on the same terms and conditions as above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city officers the price shall be 10 per cent. per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

775 (*c*) Attached to the plaintiff's reply to defendant's answer are answers to certain interrogatories propounded by defendants. The answers to these interrogatories are not set out in said abstract with the pleadings, but part of them are set out commencing at the bottom of page 296 of appellant's abstract, and ending on page 300 L of said abstract. The additional answers to said interrogatories are set out in this amendment (See Exhibit No. 50 as shown in this amendment.) These interrogatories and answers, together with the interrogatories and answers set out pages 296 to 300L of appellant's abstract, should follow appellant's reply to appellees' answer, commencing at the middle of page 19 of appellant's abstract.

Second. Appellees deny that appellant's abstract fully, fairly, truly, or correctly sets out the several Exhibits offered and introduced in evidence in the trial of the said cause. That some of the Exhibits necessary for the right determination of the issue involved in this case have not been set out in the abstract, and many of said Exhibits have not been truly or correctly set out therein. That certain Exhibits are set out which were never offered or introduced

in evidence. That important corrections and additions are set out in this amendment.

Appellees especially deny that Exhibit K-2 is a correct abstract of said Exhibit. Exhibit K-2 is the audit of the books of the Cedar Rapids Gas Light Co., made for the appellees by Marwick, Mitchell & Co. What purports to be said Exhibit is set out in appellant's abstract, commencing at page 519 and ending with page 554. Said Exhibit is not fairly or truly set out in the abstract. The tables and schedules are so arranged in said Exhibit that the cost to the Cedar Rapids Gas Light Co., of manufacturing and distributing
776 gas, as shown by its books can be clearly seen. Many of the said tables and schedules as set out in appellant's abstract have been eliminated and the figures contained in said tables and schedule have been set forth so as to make a running story, thereby obscuring the object of said Exhibit, and making it very difficult to ascertain the cost to the Cedar Rapids Gas Light Co. of manufacturing and distributing gas, as shown by its books.

Exhibit K-2 as introduced in evidence, is set out in full in this amendment to the abstract.

Defendants deny that Exhibits A (Abs. 25), Exhibit B (Abs. 29), Exhibit D (Abs. 30), Exhibit 4 (Abs. 32), Exhibit on page 34 of abstract, Exhibit 5 (Abs. 36), and Exhibit on page 37 of the abstract was ever offered or introduced in evidence, and said Exhibits are denied.

Appellees deny that appellant's abstract fairly, fully or correctly sets out the various Exhibits offered and introduced in evidence by the plaintiff in the trial of the said cause, being numbered from 1 to 62 inclusive. That the errors and omissions contained therein, and corrections and additions thereto are set forth in the body of this amendment.

Appellees also deny that appellant's abstract fully, fairly, truly or correctly sets forth Exhibits F, G, H, O, S, T, U, W, X, Y, Z, A-2, F-2, G-2, J-2, K-2, L-2, M-2, S-2, T-2, U-2, V-2, W-2, R-2, X-2, Y-2, A-3, B-3, C-3, D-3, and D-3x, and allege that the errors, omissions, corrections and additions to said Exhibits are set out in the body of this amendment to appellant's abstract.

Third. Appellees deny that appellant's abstract of the record fully, correctly, fairly or truly sets out the testimony of the following witnesses who testified in the said cause, to-wit:
777 Edward G. Pratt, W. E. Steinwedell, E. G. Cowdery, J. C. Markley, George McLean, George F. Kellogg, R. A. Wallace, J. C. Loomis, George T. Hedges, Glenn M. Averill, A. T. Averill, H. S. Keffer, J. P. Messer, T. E. Ravenscroft, I. W. Darr, C. H. Campbell, C. J. Fox, H. L. Nehls, James Hall, J. C. Gillespie, Thomas Suchomal, L. M. Healey, Alton D. Adams, Edward W. Beemis, Allen McDuff, James W. Bowman and George B. Dutton.

Corrections and additions to the testimony of said witnesses are set forth in this amendment to appellant's abstract.

Fourth. Appellees deny that appellant's abstract of the record correctly, truly, fully, or fairly sets out the testimony in the order in which the same was offered in the trial of the said cause.

Deny that Exhibit 25, being the plaintiff's audit of its books by George F. Kellogg was introduced in evidence in the order shown and deny that George F. Kellogg testified regarding the said audit in the order shown in the said abstract. The said Exhibit was introduced in evidence and the witness George F. Kellogg, testified after appellant's expert witnesses, Pratt, Cowdery, Markley and McLean had testified as to the cost of manufacturing and distributing gas.

On the trial of the said cause, the defendants demanded the said audit, which had been referred to by the witnesses McLean, Markley, and Pratt, before the cross examination of said witnesses were concluded, and that plaintiff refused to produce the said audit.

Denying the correctness of appellant's abstract, appellees allege that it is impracticable to make specific denials or point out
778 each error or omission in appellant's abstract in this formal denial, because of the numerous errors, omissions, and incorrect statements, and because of the great volume of testimony and the large number of Exhibits offered and introduced in the trial of the said cause; that such imperfections, omissions, and incorrect statements are specifically pointed out in the following amendment to the abstract of record, and the same are, by reference, made a part of this formal denial of appellant's abstract of the record.

Amendment to Abstract of the Record.

To correct appellant's abstract of the record, and to more fully set out the pleadings filed in the said cause, the testimony given at the trial thereof, and the Exhibits offered and introduced in evidence at the said trial, and to strike out portions of the testimony and Exhibits offered in evidence on the trial thereof, as shown by appellant's abstract, appellees amend appellant's abstract as follows:

Corrections in Pleadings.

Strike from appellant's abstract of the pleadings (Abs. 9, bottom) the following: "That the said proposed ordinance, fixing the rates for gas, passed December 21, 1906, if put in force and enforced, will, at the rates therein specified, work a reduction of more than 25 per cent. of plaintiff's gross income," and insert in lieu thereof the following: "That the said proposed ordinance, fixing the rates for gas, passed December 21, 1906, if put in force and enforced, will, at the rates therein specified, work a reduction of more than 28 per cent of plaintiff's gross income."

779 Strike from appellant's abstract of Exhibit B attached to plaintiff's petition, Section 3, contained on page 14 of the said abstract, and substitute in lieu thereof the following:

"1186. Price, 3. That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 per cent. per thousand feet discount if consumers pay on or

before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more feet per month the discount shall be 45 per cent. per thousand feet for all purposes, if paid on the same terms and conditions as above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city offices the price shall be 10 per cent. per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

Corrections and Additions to Testimony of Edward G. Pratt.

Addition. The testimony of Edward G. Pratt, as to Lots 1, 2, 3, and 4 in Block 9, being purchased in anticipation of future needs (Abs. 37, bottom, and 38, top), was taken subject to the objection that the question called for incompetent, irrelevant, and immaterial and hearsay testimony, and for the conclusion of the witness.

The testimony of Edward G. Pratt as to the value of the real estate (Abs. 38, middle), is as follows:

Q. What valuation did you put upon the land Mr. Pratt, assumed in making your valuation of the plant?

780 Objected to by defendant. Witness not competent to place valuation on the land. Testimony taken subject to the objection.

Add to the testimony of Edward G. Pratt, as to the value of three benches of 9s (Abs. 54, middle), the following:

Q. What do you say as to whether the $3,900 is a reasonable and present valuation of the three benches of 9s which you found at the time the valuation was made.

A. I think that was the fair estimate of their value at the time and does not represent the value of new benches.

Q. What would be the value of new benches of like character?

A. Benches of that character, delivered and erected, including freight would be about $3,750 a bench. That does not include all the iron work either, that goes with the bench, so that by the time the bench was erected it would not be far from $3,900 a bench.

Q. Do you know how long they were in use?

A. I do not.

Add to the testimony of Edward G. Pratt as to the value of three benches of 6s (Abs. 54, middle), the following:

Q. Did you ascertain how long they had been in use?

A. I did not ask, but I did ask whether they had required any patching up to this time, and whether they had shown any leakage or anything of that kind. That does not indicate anything

781 particular. They may be cracked all the way around and may not require any patching at all. It depends upon the way it is fired, and the firemen may spoil the bench in three weeks by the way it is fired and cooled off.

Q. Did you see anything of that kind with these benches?

A. I did not.

Correction. Correct the testimony of Edward G. Pratt on the ques-

tion of the value of the purifying boxes (Abs. 58, middle), by inserting after the word "capacity," fourth line from the bottom of the second paragraph (Abs. 58), the following words, "As these, 20 x 20 x 5, new," the original question and answer being:

Q. What would be the cost of new boxes of like dimensions?

A. Of course I could not divorce my mind from the fact that while these boxes were apparently in first-class condition they had received use elsewhere, but you take a new box of practically the same capacity as these, 20 x 20 x 5, new, and they would cost $16,682."

Q. Do these boxes serve the purpose for which they were made and installed?

A. They do. They are a little out of date for the reason that they are only three feet deep. The modern purifying box is five feet deep, giving greater capacity for materials for the same floor space. The contents is 4,100 bu. of iron oxide.

The testimony of the witness Edward G. Pratt, as to the increased cost (Abs. 62 to 65), or value of gas pipe laid under brick
782 and asphalt paving was taken subject to the objection that the question called for a legal opinion and was not a subject of expert testimony, add the following:

Q. How much did you allow in addition to the ordinary laying price of pipe, for pipe that was laid under brick paving.

Objected to for the reason that the question called for a legal opinion, and an attempt to examine the witness on a question that is not a subject of expert testimony, and defendants further object to the claim that plaintiff be allowed additional valuation for the cost of laying mains on account of brick and asphalt paving, and ask to be allowed to introduce at this time an ordinance of the City of Cedar Rapids, which provides and requires all gas and water pipes to be laid before the improvement of the city is made, and defendants ask that this ordinance be considered as a part of this objection and as grounds for the said objection.

And it is agreed that this objection shall stand as to each and every interrogatory propounded to the said witness, touching the question of laying gas or service pipes under brick or asphalt pavement.

Strike from the testimony of Edward G. Pratt the following from Abs. 65 top: "It would be necessary to have a working capital of $25,000.00 in addition to the supplies I have included in my estimate or $40,000.00 in all." And substitute in lieu thereof the following:

Q. You may describe what you mean by working capital and you may state about how much money a company of this character, particularly the Cedar Rapids Gas Light Co., should have as working capital.

783 A. In my estimate I have included many items, many of which you have mentioned as a part of the physical valuation of the working capital, and in addition to that I have placed an amount which I consider proper as working capital; it seems to me we would have to consider the beginning of operations, that is to

say, we would begin making gas and distributing it in Cedar Rapids today. You would have to provide for all the materials used at the works; provided for supplies required for distribution, have to provide for our pay rolls sufficient to fill our holders with enough gas to supply the town and sufficient to pay our man for laying the services, making service connections and paying the salaries of our clerks, enough wages and salaries of all employed in the work by the company. In order to do that it is necessary to have a working capital.

Q. What would you estimate that such a working capital would have to be with a plant of this character?

A. $25,000.00 in addition to what I have indicated in the list of supplies.

Q. You have indicated about $8,000 or $10,000, have you not?

A. I would say so, yes.

Q. That would bring a new plant somewhere near $35,000.00?

A. Yes, about $40,000.00.

Strike from the testimony of Edward G. Pratt the following words, found in the next to the last sentence of the second paragraph, page 64, "or an increase of 14 per cent. over my valuation."

784 Additions. On the question of the valuation of the said plant (Abs. 39 to 65), Edward G. Pratt was asked questions and objections were interposed as follows:

Q. In the building of a new plant, Mr. Pratt, is there an item that should be considered and charged into the value of the building, or the cost of a building, known as engineering expense?

Objected to by the defendants as incompetent, irrelevant, and immaterial, and having no bearing on the issues involved in this case, and not applicable to the situation in Cedar Rapids.

Testimony taken subject to objection.

Q. You are familiar with the customary charges for those items, are you?

A. I am.

Q. You may state what those items should be.

Objected to as incompetent, irrelevant, and immaterial, calling for the conclusion of the witness, on a question not involved in this case, and wholly foreign to any issue involved in this case, and as calling for an item of expense that is not essential in that this plant is a going concern.

Testimony taken subject to objection.

Q. State the amount which should be allowed in your opinion for engineering and superintendence.

Same objection as last above.

A. $18,679.61.

785 Q. Is there another item that should be allowed, known as interest on capital during the construction of the plant? Same objection as last above.

A. The money spent in constructing works of the size of this would be dead capital during that period. * * * I have based my calculation upon the works being constructed within the period

of a year. I have therefore allowed interest on the capital that is being expended in the construction of these works during the period of a year. The item of interest at 6 per cent. is $22,415.52.

Q. Is there an item, Mr. Pratt, known as the cost of organization?

A. There is.

Q. You may state what it is, and what should be taken into consideration?

Same objection as last above.

A. In the organization preliminary to the erection of a plant like this, there are certain expenses that are always necessary, such as legal expenses, the preparation of certain papers in connection with the corporation, and promoting of the company, and a certain charge of people who furnish money for such enterprises—bond houses—in loaning money for the purpose of building or constructing property like this.

Q. What have you estimated?

A. Four per cent. on the structural value of the property. * * * That would amount to $14,943.69.

786 On the question as to the value of the good will, or going value of the company's plant, add to the testimony of Edward G. Pratt the following:

Q. What in your opinion should be added to the physical value of the plant and to the items already given of this particular plant, as a value of the going concern or good will of the business.

Objected to by defendants as being incompetent, irrelevant and immaterial, and not an issue in this case, and not an element to be taken into consideration in determining the value of the plant or the reasonableness of the ordinance rates.

Testimony taken subject to the objection.

A. I would say that the good will of the company in a town of the size of Cedar Rapids, with its present business, and what it has accomplished in the development of the business is worth at least $100,000.00.

On the question of the capacity of the gas works (Abs. 68, top), add to the testimony of Edward G. Pratt the following:

Q. Do you know the capacity of the present plant, including the coal gas and water gas plant?

A. Do you mean you want the capacity of the works now, or the capacity of the works when I examined it?

Q. The capacity of the works at the present time.

Objected to by defendants as incompetent, irrelevant and immaterial. It is already shown that the works have been increased since the ordinance was passed, and the size of the works at present is not a proper element entering into the question of fixing the price of gas at the time of the passage of the ordinance.

787 A. The total generating capacity of the works, including the coal gas and water gas apparatus, would not be far from 750,000 cu. ft. daily.

Q. You may give the reporter the items you have in your esti-

mate of the new plant, together with the amount that you have figured they would cost.

Objected to by defendants as incompetent, irrelevant and immaterial, and foreign to any issue in this case and not assisting in the least in determining the value of the plaintiff's property and time of passing the ordinance in question will not assist in determining whether the ordinance assailed is reasonable or not.

Testimony at bottom of page 68 and page 69, and top of page 70 of the abstract, taken subject to said objection.

Cross-Examination—Edward G. Pratt.

Correction. Correct the testimony of Edward G. Pratt, near the bottom of page 75 of appellant's abstract, by striking out the following:

"I knew the increase in 1903 over 1902 was about 18.18 per cent., 1904 over 1903, 16.74 per cent., and of 1905 over 1904, 19.28 per cent., and 1906 over 1905, 18.67 per cent.," and substitute in lieu thereof the following:

"I did not know the increase in 1903 over 1902 was about 18.18 per cent.; 1904 over 1903, 16.74 per cent.; 1905 over 1904, 19.28 per cent.; and 1906 over 1905, 18.67 per cent.

Addition. Add to the testimony of Edward G. Pratt, bottom of page 77 of appellant's abstract:

788 Q. Assuming that $150,000.00 represented by the stock of this company does not represent a dollar of actual investment, and that the company has declared, nevertheless, and paid dividends to the extent of $12,000 a year for a number of years, would you say then at the end of the franchise that they were entitled again to water their stock and recapitalize and have added to it the cost of construction that had been made by the excessive rate charged to the consumers.

Objected to by the plaintiff as being incompetent, irrelevant, and immaterial and not cross examination.

A. I believe the company has the right to issue and sell stock as fast as construction value of the property increases; that is to say that if the present values of the property is $400,000, and the original value was $150,000, the company has the right to issue stock for its own protection, either to sell that stock or to keep it themselves, for it represents money invested in proportion to the value of the property.

Add to the testimony of Edward G. Pratt on the question of the high pressure pipe (Abs. 80, bottom), the following: "I do not know how many consumers of gas live between Twentieth street and Kenwood Park. I understand there are a number of consumers, but that would not alter it. The consumers as far as Twentieth street might be supplied with gas prior to the laying of the high pressure mains. I know that Mr. Averill never would have expended his money in extending the mains unless there was some reason for his doing it.

Add to the testimony of Edward G. Pratt, at the end of the first paragraph on page 83 of the abstract, the following question and answer:

789 Q. Didn't you testify that it was a poor gas company that would charge to the consumer service pipe from curbing to the meter?

A. Yes, sir. That was several years ago. Since, I have changed my mind on that subject.

Addition. Add to the testimony of Edward G. Pratt in the matter of the value of meters, middle of page 88 of the abstract, by adding the following: "If as a matter of fact the books of the company show that the expense of setting the meters, the freight on the meters, and the fittings used in setting the same, are charged to operating expenses, in determining the reasonableness of this ordinance, it would not be proper to add the freight, labor and cost of setting the same and the value of the fittings to the value of the meter, as I have done. If it is charged to operating expense, it should not be charged to capital."

Add to the testimony of Edward G. Pratt, on the question of working capital, at the end of the first paragraph on page 93 of the abstract, the following questions and answers:

Q. The coal that you found on hand, and the amount of oil and other materials that go into the manufacture of gas at these works, was enough to run the plant considerable over one month, was it not?

A. Yes, sir.

Q. The amount of coal at their command would have run them about 60 days, wouldn't it?

A. Yes, it would have run them for one year.

Corrections and Additions to Testimony of W. E. Steinwedell.

790 Correct the testimony of W. E. Steinwedell, at the end of first paragraph on page 97, by inserting the following question, objection and agreement:

Q. You may tell us what machinery you placed a value upon, that is the replacement value, and give the amounts.

Objected to as incompetent, irrelevant, and immaterial, and calling for a valuation of machinery altogether different from the kind of machinery in these works, and the value of new machinery at the present time, and is not a fair and accurate basis upon which to fix values of machinery. The cost of the machinery used in the plant not being called for in any manner except on the basis of comparison; and by agreement this objection is to stand to each and every interrogatory propounded to this witness on the question of values.

Further Corrections and Additions to Testimony of Edward G. Pratt.

Addition. Add to the testimony of Edward G. Pratt on the matter of working capital, after answer on page 96 of the abstract, the following: "Before the second pay roll comes around, the company

would receive nearly $8,000 for the sale of gas; probably 75 or 80 per cent. of the consumers pay before the 10th of the month. I do not know how much it would receive for bi-products. I assumed that it was a going business and that its coke was being sold and that the tar was being sold at a ready market and for current prices. I understood the price of coke delivered was $6.50 per ton. In fixing the price of labor at about $4,000 per month, I took into consideration the conditions at Cedar Rapids, and the works of the
791 plaintiff company. That is this $4,000 per month refers to the labor that I would employ if operating the works in an ideal manner.

Corrections and Additions to Testimony of E. G. Cowdery.

Correction. Add to the testimony of E. G. Cowdery at the end of the second paragraph on page 106, the following:

Q. Have you made a computation and are you prepared to give an opinion as to the cost of manufacturing gas in Cedar Rapids?

Objected to as calling for the opinion and conclusion of the witness, upon an ultimate fact as to what is a reasonable rate. The inquiry should be limited to the cost of production and distribution of the gas and other matters, but as to whether the rate is or is not reasonable; the question is incompetent, irrelevant and immaterial, and by agreement this objection shall stand to all questions propounded to this witness bearing on the subject of the cost of manufacturing and distributing gas in the City of Cedar Rapids.

Addition. Add to the testimony of E. G. Cowdery, at the end of the next to the last paragraph on page 111 of appellant's abstract, the following:

Q. Assuming that one-half of the gas manufactured is coal gas, and one-half water gas, what would be the cost of the gas in the holder as you have figured it?

Objected to as assuming a state of facts not applicable to the Cedar Rapids Gas Light Company's plant at the time of the passage of this ordinance and a state of facts not shown in the record.
792 Testimony taken subject to the objection.

Correction. Strike from the middle of page 112 of the abstract, the following: "For taxes I have taken 5c. per thousand, which is what the company expects their taxes for the present year to be, and believe it a usual charge," and substitute therefor the following:

Q. In the matter of taxes, have you assumed anything for the conditions in Cedar Rapids?

A. I have taken what the gas company expect their taxes to be the present year, which I understand is $5,000.

Defendants move to strike out this answer as not responsive and a voluntary statement of the witness on a matter of which he has no knowledge, and it is hearsay testimony and not the best evidence.

A. I think this is a usual charge.

Strike the last paragraph on page 113 of the abstract, and substitue in lieu thereof the following:

Q. Mr. Cowdery, in applying this estimate, and giving your opinion as to what would be a reasonable rate for the Cedar Rapids Gas Light Co. to charge for gas, and giving the statement that you have, what do you say as to all those items being necessary charges for the Cedar Rapids Gas Light Company to make.

Objected to by defendant as being incompetent, irrelevant, and immaterial, particularly incompetent because it does not appear but what the gas company keeps books and can produce figures showing the actual cost of manufacturing and distributing gas, and further it calls for the opinion of the witness upon the supposed cost; it is not the best evidence, and calls for an opinion as to
793 what income should be derived by the company on an estimate which the witness makes, and the witness is incompetent.

A. I believe these figures are fair figures for the cost of a plant in the condition of this one. The Cedar Rapids Gas Light Co. cannot safely omit any of these figures which I have given. The omitting of any of these items would result in the dissolution of the company.

Q. Mr. Cowdery, what do you say is a fair and reasonable income to the Cedar Rapids Gas Light Co., over and above the items which you have included in your statement of the cost of gas, basing your answer upon a percentage of the capital invested.

Objected to as calling for incompetent testimony, in that the question as to fixing the rate is vested by the legislature of Iowa in the City Council and the question as to whether the rate fixed is reasonable or unreasonable is solely a matter for the court, and is not a subject of expert testimony, or a subject on which the witness is permitted to give an opinion. He can give the cost of distribution and the cost of manufacture, and other items, but it is for the court to say whether the rate fixed by the ordinance in this case is reasonable or unreasonable.

A. I believe the Cedar Rapids Gas Light Co. is entitled to 10 per cent. upon the cash invested in the property.

Q. Assuming that during the year 1906 the Cedar Rapids Gas Light Co. had an investment of $400,000 in their plant, and that its output of meter gas was 92,000,000 cubic feet, how many cents per thousand cubic feet would you add to your figure as being the rate they should charge in Cedar Rapids.

794 Objected to by defendants for the same reasons contained in former objections to testimony of this witness, and also for the reason that the question is based upon an assumption that the record shows the cost of the plant was $400,000, or anything like it, on the contrary evidence shows that its cost was $267,500. The question is not predicated upon any fact or state of facts, shown in the record.

A. I would divide the 10 per cent. of that $400,000 by 10 per cent., which I think would be about 40c. per thousand cubic feet.

Strike the first paragraph on page 114 of the abstract, and insert in lieu thereof the following:

Q. In your experience and study and knowledge of the gas busi-

ness, is it necessary to provide some method of giving the patrons a discount in order that they may pay promptly?

Objected to as not a subject of expert testimony. The witness is not competent to testify on the subject; it is a subject of business regulation, and is not for the witness to say whether it is essential or not.

A. I believe it is necessary in conducting the business economically to provide for a discount. If no discount is provided for, there would be no inducement to pay promptly, and this would add to the expense of what we call distribution. It adds to the expense of collecting the bills which I included in the 9c. item, which is quite material. I have supposed there was a discount.

Addition. Add to the testimony of E. G. Cowdery, on page
795 114, before the words, "Cross examination," the following: "Plaintiff's counsel now offer in evidence the schedule above identified by the witness and marked by the reporter "Exhibit No. 8."

Objected to by the defendants for the same reason as given in the objection to the several interrogatories as they were propounded to this witness.

At the end of the first paragraph on page 116 of the abstract, add the following questions and answers:

Q. You have met them at different meetings of the gas trust organizations, have you not, that you have mentioned?

A. Possibly; not that I remember of.

Q. You know that he is a member of these organizations?

A. Yes, I think so. I met Glenn M. Averill, secretary of this company, at those meetings. He is a member of the organizations that I am a member of.

Add to the testimony of E. G. Cowdery on subject of depreciation, at the end of the second paragraph from the bottom of page 117 of the abstract, the following:

"So as a matter of fact, there are no records kept, and your experience would not aid you at all in arriving at what was a proper sum for the depreciation of this gas plant in Cedar Rapids, that is right, is it?

A. "That is right. I would not attempt to say what the actual depreciation of the component parts of this plant would be. I could not say whether it was 2½c. per thousand cubic feet or ten
796 cents. My judgment is based upon the amount I believe the fair rate to adopt by all gas companies. It is an arbitrary amount, and not based on any scientific basis or actual figures. There is no scientific principle controlling it."

Add to the testimony of E. G. Cowdery, at the end of the second paragraph on page 118, the following: "The risk of gas properties being destroyed by fire is very small. Smaller than it is in dwelling houses. In my allowance of 10c. per thousand cubic feet I also include the hazard of destruction by cyclone. I never heard of but two plants being injured in this way. One at Mobile, Alabama, and one at Galveston, Texas. The damage to the plant at Galveston, Texas, was by the flood. I do not know how serious it was to the

plant. Know of no other gas plants that have been injured in this manner.

Q. How much of that 10c. per thousand cubic feet did you allow for the fact that parts of this plant would become obsolete?

A. I did not try to apportion it off. Have no idea. Do not know how much should be set aside each year in dollars and cents for such a contingency. My experience, covering a range of thirty years does not give me any idea in respect to that matter. I can not tell how much I would apportion to the building or grounds or to the retorts, or to the water gas apparatus, or to the mains, and my answer would be the same to every piece of gas apparatus or machinery in the plant, if you should go through the whole list of the property of the plant.

Q. Then we have three items, insurance, cyclone or floor conditions, and new inventions or improvements for which you set aside ten cents per thousand cubic feet.

797 A. And actual depreciation, by which I mean when the plant is worn out or has to be reproduced. I do not know what proportion of this ten cents I would set aside for that purpose. I just figured that depreciation in a general way from my experience. I did not make figures on it as you say. I have only figured it in my judgment. I exercise my judgment. I do not take different parts and figure so much for each part. I do not think there is in existence any reliable records upon which to compute this depreciation, or this amount upon which I have allowed ten cents per thousand cubic feet. The Peoples' Gas Co. of Chicago set aside a certain figure for depreciation, but I do not know the amount. I have no idea whether it is one cent or ten cents per thousand cubic feet, on gas sold, which is so set aside. In St. Louis I do not know whether they set aside one cent or ten cents per thousand cubic feet of gas sold for depreciation. I do not know of a gas company in existence the size of the company at Cedar Rapids, with conditions the same as here, where they set aside ten cents per thousand cubic feet of gas sold for depreciation.

I appeared before the committee of gas and water and electric light of the City Council of Chicago sometime in the year 1906 at the request of the city. In my report to the City Council as to the cost of manufacturing and distributing gas, I set aside ten cents per thousand cubic feet of gas sold for depreciation. In that same report I stated to the committee of the City Council of Chicago that the consumers of the said city should pay 98c. per thousand cubic feet of gas sold. That company afterwards accepted a price of 85c. per thousand cubic feet. The Peoples' Gas Co. of Chicago, prior to the reduction paid 6 per cent. annual dividends on their capital stock. For the next year after the reduction they paid 5 per cent. and are now paying 6 per cent.

798 Outside of the fire of Milwaukee, I do not know of the buildings of any gas plants that have ever been destroyed by fire.

Add to the testimony of E. G. Cowdery, at the bottom of the third paragraph on page 118, with regard to taxes, the following:

Q. If as a matter of fact then, the records of the collector of taxes as well as the gas company, both show that the average taxes paid by the Cedar Rapids Gas Light Co. for five years, for the years 1902 to 1906 inclusive, was at 2.7c. per thousand cubic feet of gas sold, then your estimate would be entirely wrong and misleading, would it not?

A. No, I do not think so.

Q. What did they pay in 1906 for taxes?

A. Perhaps half of $5,000; I do not know.

Q. Suppose they only paid $1,965.36?

A. That would alter my opinion.

Q. Now, Mr. Cowdery, as a matter of fact is not the experiences of what can actually be produced and what is actually done in the gas works, is not that far better than the guess or the opinion of any expert as to what might be done in the future?

A. I do not think it is. Not necessarily, no sir.

Q. You think then the experiences of the past do not lead us or guide us at all in the fixing of the rate for the future?

A. The experiences of the past has not any more
799 to do with it than what you may look forward to with the future years to come, if you are going to fix a rate for the future.

Add at the end of the first paragraph on page 119 of the abstract the following, testimony of E. G. Cowdery:

"If the Cedar Rapids Gas Light Co. charges all the advertising and other promotion expenses to operating expense, and also all of the fittings, that I have testified to and the labor for setting meters, setting these fittings, and arc lamps to operating expense or capital account, then this 3c. per thousand cubic feet that I have suggested should be eliminated. You can't put it in twice. If they have charged it to operating expense, then it could not be charged to promotion.

Add at the end of the second paragraph on page 119 of the abstract, the following from the testimony of E. G. Cowdery: "Every time the gas company has a law suit, its consumers should pay the bills and this is true whether the rate is reasonable or unreasonable."

Add to the testimony of E. G. Cowdery at the end of the first paragraph on page 120, the following:

"I have no opinion as to how many men it would require to conduct the office in a system like this. I do not know how much each should receive. Have given you the average figure. I can not give you the highest figure nor the lowest figure. The items such as reading meters, keeping books and legal expense and officer's salary vary with different companies, but the total of them runs at about a general average of about 9c. per thousand cubic feet with companies of this size. This item depends principally upon
800 the salaries paid. Could not say how many men it would require in an office such as plaintiff's. Would not say that two bookkeepers could keep the books; I do not know anything about it. I have given an average figure. I could not give you a single company where this item is 9c. I can not give you specific

figures on this item of any company. In this case it would not make any difference whether the company paid high salaries, or low salaries, my estimate for office expense would be the same. Nor would it make any difference if the company used five men or only three in the office.

And at bottom of first paragraph of page 121 of appellant's abstract of the testimony of E. G. Cowdery:

If I was going to divide up the 7c. allowed for maintenance, I would probably put two cents on the maintenance of mains, two cents on the maintenance of service, and three cents on the maintenance of meters. Do not know how many feet of service pipe this company has. I do not figure it out that way. I have told you that by examination of the accounts of a great many gas companies, they average it in this way, 7c. per thousand feet for that group of items. When you come to get at the details of that group, I could not give them.

My calculation is based on the assumption that the gas company maintains the service from the curb to the house of the consumer. You would have to cut down my estimate if the expense of maintaining the service from the curb to the house was borne by the consumer. The cost to the company of taking care of the service pipe is provided for under the head of "Complaints of consumers."

In Peoria I testified that the depreciation on mains is
801 one per cent. That the depreciation on service connections was five per cent., on the meters as seven per cent., I also testified in that case that these figures covered repairs. Five per cent. of the value of plaintiff's service connections would be $400, instead of $2,000 annually.

I do not know who originated the plan of placing the depreciation and reserve at ten cents per thousand cubic feet of gas consumed. I do not know when it was first used. Do not know when I first used it in giving testimony. The subject has been discussed among gas men for a number of years at the meetings of our organizations. In my letter of January 3, 1906, to the committee on gas, oil, and electric light to the City Council of the City of Chicago, I said that the total cost to produce and develop gas in the City of Chicago was 98.67c. per thousand cubic feet of gas sold, including interest and dividends. In this same letter I allowed ten cents for maintenance, renewals, and reserve. I did not know that the books of the company showed that the gas company had only charged six cents for maintenance and nothing for reserve. I mean to say that as vice-president of the Peoples' Gas Co. of Chicago, I do not know what the books of said company show, with reference to charges for depreciation and maintenance expense; I have no idea. Until you have called my attention to it, I do not believe that I ever saw the printed report of that committee, which contains a letter from Marwick, Mitchell & Company, dated June 26, 1906, and addressed to the chairman of the committee on gas, oil, and electric light of Chicago, advising him that there is 6.43c. per thousand cubic feet included in the figures for renewals, depreciation and repairs, as shown by the books of the Peoples' Gas Co.

802 I do not know that it ever occurred to me, that my services as a gas expert was of little value to the City of Chicago, in view of the fact that I advised the City Council of the City of Chicago that it would cost the gas company there 98.67c. per thousand cubic feet of gas sold to manufacture and sell the same, including interest and dividends, and that within six months after I so advised them, the company voluntarily reduced the price of gas 15c. per thousand cubic feet, or to 85 cents, and under that reduction, was able to pay five per cent. dividends immediately for the next year, and after that resume its regular dividend of six per cent. which it has been paying ever since. In my opinion 98.67c. per thousand cubic feet of gas was the actual cost to the gas company at Chicago at the time I testified.

I make no attempt to account for the fact that the Peoples' Gas Co. of Chicago can manufacture and distribute gas at 85c. per thousand cubic feet and still pay their regular dividends on their capital stock. I know that the reduction from $1.00 to 85c. was made within three months from the time I testified, and that said reduction was only followed by a reduction of one per cent. in dividends for the first year after which the company resumed its six per cent. dividend.

I can not explain why the per capita, consumed in Milwaukee and Detroit is 6,500 cubic feet, and is only 3,200 cubic feet at Cedar Rapids.

Addition. Add the following at the bottom second paragraph page 121 appellant's abstract.

803 About ten years ago we calculated that the increase price of coke in a given locality as compared with another locality, the conditions being normal, usually offset the increase cost of coal at the other locality.

In Peoria I testified that the residuals would be as follows:

12⅛ to 15 gallons of tar per ton of coal, and the coke would be 65 per cent or 2-3 of the weight of coal used.

Where you have a large quantity of coal tar you have a smaller quantity of gas. If you were getting 25 to 30 gallons of coal tar from a ton of coal, you would not be getting much of any gas at all.

I have learned a good deal since I testified at Peoria. I do not know what year it was I testified there.

The way the books of the People's Gas Co. are kept, I could in five minutes by referring to the books, ascertain the actual cost to the said company to produce and distribute gas, but I do not know what it cost that company to manufacture and distribute gas. I knew when I was subpenaed in this case that I would be called upon to testify as an expert on this subject.

In giving testimony on the subject of manufacturing and distributing gas I have never testified giving the exact figures of any one company. I have probably testified as I have in this case, by basing my testimony on my experience.

Very likely I testified at Peoria as to the depreciation or the amount I would charge off for maintenance, for life of mains, for

life of services, for life of holder of water gas apparatus, benches, and the different articles that go to make up a gas plant.

804 Q. After having your attention called to your testimony in previous cases, I will now ask you if you can tell me what the life of the mains in this gas plant is.

A. No.

Q. Not even approximately?

A. No.

Q. Even if I should take up this inventory and read every article from the buildings down to the smallest tools, you would say that you can not testify as to the approximate life of a single one of those articles?

A. I could not with any degree of accuracy.

I testified in the Syracuse case as follows: "I was known in Wisconsin as the champion of reduction in the price of gas. The price in Milwaukee for illuminating purposes has been reduced in the last year. The results of such reductions have been to increase the sale of gas, and an increase in the profits. This is the result in a large number of cities where reductions have been made."

"Since I left Milwaukee they have reduced the price of fuel gas from $1.00 to something less than 80c. I was manager of the St. Louis Gas Works, for four years; but I do not know what it cost that company per thousand cubic feet to manufacture and sell gas. While there it was a part of my duty to see where there was leakage and excessive charges and to reduce them if I could. While there I consulted the books to ascertain the leakage, fuel consumed, receipts from *bi*-products, etc. After I knew these facts, I could tell just exactly what it was costing to produce and distribute gas. I absolutely knew all the time I was at St. Louis what it was costing that company to manufacture and distribute gas. I testi-

805 fied in Chicago while I was still manager at St. Louis, and it is quite likely in my testimony there, that I said I did not know how much it cost in St. Louis to manufacture and produce gas.

In placing insurance I would carry the value of the buildings. I had no idea what amount I would carry when I fixed the annual outlay for insurance at $1,000 for this plant. At St. Louis the price of gas for fuel purposes was 80c. per thousand cubic feet, and for any one using ten or twenty thousand cubic feet per month I do not remember which, the price was 70c. and to any one using in excess of that amount, the price was 60c. per thousand cubic feet for all above that amount. The company was prosperous while I was there.

Corrections:

Strike from appellant's abstract, middle of page 124, the following from testimony of E. G. Cowdery:

"The gas furnished in St. Louis at 60c. was not furnished at a profit to the company," and insert in lieu thereof the following: "I would not say that the gas furnished at 60c. per thousand cubic feet was not furnished at some profit." (Transcript 456, bottom.)

Strike from page 126 of appellant's abstract, the words "Redirect

examination," and insert the said words at the bottom of the first paragraph of said page.

Also add: "I went to Milwaukee in 1865; the population of that place was about 125,000 then. In 1870 it was 130,000; in 1880 it was about 150,000 to 160,000; in 1890 it was about 215,000 and in 1900 I think it was about 285,000."

806 *Corrections and Additions to Testimony of J. C. Markley.*

Correct the testimony of J. C. Markley by inserting the following objection after the question and before the answer at the top of page 138 of the abstract:

"Objected to by defendants as being incompetent, irrelevant, and immaterial, and not a true basis of establishing the fact of what gas can be produced and distributed for in Cedar Rapids, and as no basis or guide in determining the question before the court, namely the reasonableness or unreasonableness of the ordinance which is attacked, and by agreement this objection shall stand to all interrogatories propounded to this witness touching the cost of manufacturing and distributing gas in the city of Cedar Rapids.

Correction. Strike from the testimony of J. C. Markley, top of page 153 of appellant's abstract, the following: "I know a paper called Public Service. It is, I think, opposed to municipal ownership," and substitute in lieu thereof the following. "I know a paper called Public Service. It comes to the office. It is devoted exclusively to the interest of large corporations and small private corporations in keeping up high prices, and is opposed to municipal ownership."

Addition. Also add the following at the end of the next to the last paragraph on page 153 of appellant's abstract, the same being from the testimony of J. C. Markley.

"I did not bring any of the monthly reports or books of the different plants with me. I have these reports in Chicago. The books of each plant are kept at such plant. In our Chicago office we simply keep the reports in the shape of reports separately for
807 each plant. These reports are under my control in the Chicago office. I knew that in order for you to know whether or not I had made an estimate on a correct basis, you would have to know from what I made it. I came here as a witness at the suggestion of Mr. Pratt to give testimony in this case.

Q. And give figures as to the cost of manufacturing and distributing gas in Cedar Rapids?

A. Yes, sir.

Q. And you left behind you everything by which you could tell whether it was correct?

A. Yes, sir.

Q. And you want us to accept your bare statement, without the production of the books?

A. Well, I don't know about that.

Q. Do you decline to produce the reports of these several companies.

A. Yes, sir. I suppose Mr. Cowdery would be a member of the concern interested in keeping up the price of gas from my knowledge of him.

Correction. Strike from the testimony of J. C. Markley, page 158 of the abstract, "I think the works (at Mobile) had been built 50 or 60 years," and insert in lieu thereof the following: "The plant had been there probably 60 or 70 years. It was one of the oldest plants in the country."

"Did not take up all the pipe, some portions of it was good. We probably relaid two or three miles of pipe to replace destroyed pipe."

808 Addition. Add to the testimony of J. C. Markley at the bottom of the first paragraph on page 160 of the abstract, the following:

The size of the plant cuts a figure in making the composite average. I take the amount of gas manufactured and sold in the small plants, as well as in the larger ones. I never heard of a case where the figures were taken of plants that produced from fifteen to seventeen millions and put them together and used them as a basis for a rate in a plant of 100,000,000.

When I made my estimate of the depreciation of two per cent. on the mains, I had Mr. Pratt's inventory before me. I do not know whether or not gas companies set aside a reserve fund for depreciation or not. I can't say whether our company has any such fund or not.

Q. In other words, when you were called upon to testify in this case, you prepared a set of figures which you brought here and submitted as your best judgment in the matter, without any basis at all?

A. On the depreciation, yes. A gas company should be allowed all the contingencies which I have set out in my report and in addition receive from ten to twenty per cent. on their investment. I do not know whether the companies I am officer of pay any such return or not.

Q. You do not know anything about what returns your companies make, nor what dividends they earn, or what they charge off for depreciation?

A. No, sir. As president of the company, I may have something to do with the money making part of the company. I preside over the meetings of the Board of Directors and make recommendations to them. I recommend whether a dividend is justified or not. I generally make a report at the end of the year, setting forth the condition of the property and its needs, but I can not remember as to what its earnings are. I would have to look at the records. I have looked at the records several times. I can remember the sales and the output, but I can't remember whether it has earned a dividend of six per cent. or twenty per cent. or anything about it, and I can not tell what it has set aside for contingencies. I decline to say how much stock I have in the company, and decline to state how much stock I have in the other companies testified about, or what dividends I receive. I decline

809

to furnish any report of my companies or any book or paper by which the court can determine whether the estimates I have given here are based on a correct basis or not. I also decline to furnish the court the amount of stock I own or the amount of dividends I receive from any of these companies. All I am willing to give to the court is the figures I have made up which are an average estimate and my best judgment in the matter.

The 13.3c. for depreciation is not figured from any average. That is a matter of opinion only. I understood that the water gas apparatus on which I charged off ten per cent. for depreciation is an old apparatus and has been supplanted by a new one. It is not being used. I would set aside $450 per year on this apparatus. I do not know how old it is. Assuming that this apparatus was put in ten years ago, if the company adopted my plan they would have enough funds on hand to buy new apparatus and still have the old apparatus left.

Q. Suppose they were able to run it by their ten per cent. (you say they have received sufficient to buy and install a new
810 plant), now then, why should they still be charging depreciation at ten per cent. to the people on this old apparatus? When are you going to stop that?

A. I should say that would never be stopped. I have charged eight per cent. depreciation on boilers. The life of the boilers is approximately ten or twelve years. It isn't 25 years. With ordinary care and repair, the average life of a boiler is not 25 years. My experience tells me that it is only ten or twelve years.

Q. After going through all the details, your idea is to set aside these per cents. which you have here on each of the items, is it?

A. My idea is that there should be provided for a certain amount to cover all contingencies that nobody but God Almighty can foresee, and I have arrived in my best judgment at these figures and I have analyzed them in this particular so that it gives me a basis of getting at the results.

Q. So, then, every possible contingency that God himself can foresee might happen, you have aimed to take into consideration here, in fixing this percentage of deduction?

A. Yes, sir.

The address of the Metropolitan Gas Company of Chicago is 621 New York Life Building. Mr. Pratt's office is on the same floor of the same building. Mr. Pratt may be a stockholder in our company but I do not know.

Also add the following motion at close of cross-examination of witness J. C. Markley at end of third paragraph on page 162 of appellant's abstract:

811 The defendant moves the court to strike out the evidence of this witness and the figures and schedules submitted, or to require the plaintiff to elect whether it will produce the reports or books used by the witness in making up what he calls his schedule based on the various reports of thirteen companies. The reason for this motion is that the witness by declining to produce or submit or permit an examination of the several reports and books of

the thirteen companies, used by him, has deprived the defendant of the right of cross-examination and of any opportunity to determine and test the accuracy of the statements which he has produced or of his computations. It further moves the court to strike out the evidence of this witness as to the depreciation of the property of plaintiff, as incompetent for the reason that the witness is incompetent and has not qualified himself to testify upon the subject; and that further the basis of his opinion is founded upon nothing but a very limited experience and that in submitting his figures and calculations, they are based upon all the things that he could imagine and that God could foresee might happen, and not upon any rule, or on any experience justifying such calculations and figures, the whole schedule being purely imaginary so far as depreciations are concerned.

Testimony taken subject to the objection.

Defendants object to Exhibit 9, being the statement prepared by Mr. Markley, for the same reasons stated in the motion to exclude his testimony.

Exhibit received subject to objection.

Corrections and Additions to Testimony of George McLean.

Insert on page 303 of the abstract directly over the words
812 "Exhibit No. 10," the following: "The statement I have prepared includes the cost of labor and cost of coal, etc., as used in the City of Dubuque, and is a statement of what in my judgment would be the cost of gas in Cedar Rapids.

Q. You may give this statement and schedule and you may explain as you give it the basis upon which you have made this computation and what portions are taken from your actual experience in Dubuque and what portions have been taken from the cost of materials—the cost of coal and coke in Cedar Rapids.

Objected to by defendants as being incompetent, irrelevant and immaterial, first because it comprises a question based on actual knowledge of conditions in Cedar Rapids, and second, upon the conditions existing elsewhere, therefore part of it being expert knowledge and part based on actual facts. Further the witness has not shown himself competent to testify upon the subject. It has not been shown that he has any actual knowledge as to the conditions or cost of manufacturing gas in Cedar Rapids, and we ask that this objection apply to each and every question and each and every answer put to and answered by this witness on this subject.

Testimony taken subject to the objection.

Also add:

Q. Have you prepared a schedule showing your judgment and opinion as to the depreciation on the physical property?

A. I have.

Correct the testimony of George McLean at the middle of page 310 of the abstract by striking out the following: "Again,
813 at Cedar Falls there was an explosion that cost the company 1.35 per thousand cubic feet of gas sold, that year," and in-

sert in lieu thereof the following: "I have stated that I had not quite completed the Cedar Falls property when it was sold out and they started it up and had an explosion at a cost to the company of 1.35 7-10c. per thousand cubic feet of gas sold that year."

Addition. Add to the bottom of the first paragraph on page 316, testimony of George McLean, the following:

"I knew the person purchasing the Monmouth, Illinois, plant was purchasing it on my report. In that report I did not give the great hazards to gas business. I did not state that it would cost in the neighborhood of 30c. per thousand cubic feet of gas sold to pay for the insurance of the plant.

Addition. Add to the bottom of the first paragraph on page 320 of appellant's abstract, of the testimony of George McLean, the following: "What I have testified to about depreciation is a fundamental and scientific fact. My testimony that the depreciation of cast iron pipe is two per cent. is no guess. My age is 44 years, and from my personal experience I know as a matter of fact whether or not cast iron pipe will last one hundred years under the ground."

Add to the testimony of George McLean at the bottom of page 322 in appellant's abstract, the following: "I would not include the station meter as part of the distribution system in considering the leakage. An expert who would assign a part of the leakage to the station meter would be simply giving a guess.

Q. Why don't you say that something in the leakage might be accounted for in the station meter?

814 A. Because it never occurs once in a thousand instances.

Add to the bottom of the first paragraph on page 324 of appellant's abstract of testimony of George McLean, the following: "The persons whom I have named as hazards to the gas companies, and by reason of whom a certain sum should be set aside to protect the property of the gas companies against, are Johnson of Cleveland, Ohio, Prof. Beemis of Cleveland, Ohio, Mayor Hemingway of Cedar Falls, and Mayor Shunck of Dubuque. I do not remember the names of any others. I would say the term philanthropist applied to all of these. The gas company at Dubuque maintains a literary bureau. I do not know how much money we have paid attorneys to go before the City Councils night after night to induce somebody to forget politics.

"It has been twenty years since we paid for lobbying in Dubuque, and that is too long ago to remember much about. At Cedar Falls we paid a good deal for lobbying. I think it cost us at Cedar Falls $3,200 for the last campaign. I did not disburse it, so I do not know just who got it, but I know that we paid a good deal to the newspapers. We circularized everybody in the town, polled every voter and hired the opera house two or three times. Later on the gas company capitalized this $3,200."

Add to the bottom of the first paragraph on page 325 of appellant's abstract of the testimony of George McLean, the following: "The committee on 'Rate Making and Costs,' of the American Gas Institute of which I was a member, very nearly agreed as to what were the proper elements to take into consideration in making rates.

We agreed the elements to take into consideration are the cost
815 of manufacturing and distributing, capital and the cost of other hazards. I do not recollect the principal point upon which there was any diversity of opinion. The committee's report was unanimous. We report to the council of the American Gas Institute. I had nothing to do with the reading of the report. The report was so voluminous that they decided to not print it. I looked it over to see that it was all right, and let it go. I do not know whether Mr. A. T. Averill is a member of the council to whom this report was made or not. We are both members of the Iowa Association. He was a member of the council of the Iowa Association in 1907. I was president of that association.

Add at the bottom of the first paragraph on page 328 of appellant's abstract of the testimony of George McLean, the following: "In organizing the Waterloo Gas company, we issued $345,000 of capital stock, $120,000 of bonds. There was paid in about 40 per cent. of the face value of the stock. No other payments were made by the stockholders for their capital stock, except as the earnings went back into the company. I think we paid our first dividend to stockholders in five years. The increase in the capital stock from $180,000 to $345,000 was in 1903. I think the bonds were issued in 1900 and bore five per cent. When we sold the plant, my recollection is that the total consideration was about $745,000, including the contracts that we had outstanding for consruction, which were assumed by the purchaser. The purchasers paid $539,000 in cash for the stock and assumed the mortgage indebtedness and the outstanding contracts for construction.

Add the following at the end of the second paragraph on page 328 of appellant's abstract, testimony of George McLean:

816 Q. As compared with these men, Mr. Johnson, Mr. Beemis, Mr. Hemingway, Mr. Schunck, will you name some of the gas men whose Christian fortitude has extended to such an extent that they are building gas works at their own sacrifice for the benefit of the public?

A. I could give you something on the subject if it wasn't for my innate modesty. I think I was the first man that advocated a reduction of the rates of gas.

We never spent any money there to protect the company from Mr. Schunck, although he has been the chief hazard at Dubuque, but so far as money is concerned, it has not cost a cent. It caused us to abandon the plant for him. We went to Mr. Schunck when our franchise had fifteen years to run and asked for a franchise to the limit allowed by law, and assured him that we would make certain improvements if such franchise was granted.

Add to the bottom of the first paragraph on page 331 of the appellant's abstract of the testimony of George McLean, the following:

Q. So that in giving your figures in Exhibit 10 you did assume that this was a new plant?

A. I assumed the same average rate, that it was a new plant.

Q. Didn't you assume that on each item you set down in the Exhibit?

A. Yes, I did, that is in regard to the rate. If the prices put down here as the prices of new apparatus, new mains, new buildings, while the same have been in use on an average of 16 years, then the estimate of valuation is too high, and the rate based on that valuation is wrong.

817 Directly over the words, "Re-direct Examination," on page 335 of appellant's abstract, testimony of George McLean, add the following: "The defendant moves the court to strike from the testimony of this witness and from Exhibit 10 all of the testimony, and items with regard to distribution, labor, salaries, general expenses, legal expenses, taxes and fire and boiler insurance for the reason that the said estimates and testimony with regard to those items were taken from the books of the Key City Gas Light Co., and the witness refuses to produce the said books in order that a cross-examination may be had; with regard to the correctness of the amounts stated by witness in regard thereto, and defendants move the court to require the plaintiff to now elect whether it will produce the said books of the Key City Gas Co. containing the said items, or the records of the said company, containing the same, or have the said evidence and Exhibit stricken from the record.

Testimony and Exhibit 10 taken subject to the objection.

Add the following from the testimony of George McLean, at the end of the second paragraph, page 337, of the abstract: "Objected to by the defendants as incompetent, irrevelant and immaterial, for the reason it calls for the legal opinion of the witness and asks the witness to substitute himself for the court and to pass upon the ultimate fact in the case.

Correction. Substitute the following objection for the one given at the bottom of page 338 of appellant's abstract: "Objected to by the defendants as being incompetent, irrelevant and immaterial, for the reason that it contains the opinion and statement in re-

818 gard to a matter of which the witness has no knowledge or experience, the same purporting to be a statement from insurance companies and is not the best evidence.

Strike the question on page 352 of the appellant's abstract of the testimony of George McLean, and substitute in lieu thereof the following question and objection:

Q. You have been asked on re-cross examination if the rate which you have of $1.50, which includes the limit which gives all this insurance reserve and all these hazards is not, in your opinion a safe investment. Now, you may explain why the companies are not able to charge that rate.

Objected to by the defendants as leading and suggestive, and not re-direct examination, being incompetent, irrelevant and immaterial for any purpose calling for hearsay testimony, the witness is incompetent and the question inquired into is not expert testimony, it being immaterial what is done in other places.

Testimony taken subject to the objection.

Strike from the top of page 354 of appellant's abstract of the testimony of George McLean, the following:

"I have not been able to fix those hazards and fix the price satis-

factory to my own judgment," and substitute in lieu thereof the following:

Q. In addition to these hazards you have enumerated here, do you think three cents per thousand cubic feet would be sufficient to cover the political, economical and social hazards?

A. I said that three cents would only be a fraction of that amount necessary to be allowed against those hazards.

819 Q. Should ten cents per thousand cubic feet be added to the amount necessary for the manufacturing and distribution here.

A. I do not think that would cover it here.

Q. Would about 15c. per thousand cubic feet?

A. I think it doubtful if 15c. would cover it.

Q. Would 20c. cover it?

A. I am not prepared to pass judgment on it.

I did not take into consideration what is known as rent insurance. If the plant were entirely consumed it would be several months before it would be rebuilt, before you could make gas, during which time the company would be without returns on its property. Something should be allowed for that hazard. I think one cent would cover that.

Addition. At the end of the first paragraph on page 325 of appellant's abstract, of the testimony of George McLean, add the following:

Taking these things into consideration the total cost to manufacture and distribute gas in Cedar Rapids would be $1.33255 per M c. f. There may be some I have omitted. These figures do not include dividends or interest on the mortgage indebtedness.

Further Corrections and Additions to Testimony of Edward G. Pratt.

Addition. Add the following to the testimony of Edward G. Pratt, after the figures $1.2287, near the top of page 389 of appellant's abstract:

820 Q. I will ask you Mr. Pratt if you have prepared a statement showing what you believe to be the cost of gas in the City of Cedar Rapids, in the year 1905.

Defendants object to this testimony as incompetent, irrelevant and immaterial, for the reason that the cost of gas in the City of Cedar Rapids for the year 1905 can be shown by the books of this company, and it is not shown that the witness is familiar with the books of this company, and any estimate made by him is hearsay. Further that the basis of his testimony is not founded on any actual knowledge of the condition of the books of the company or of the cost of gas as shown by the books.

Testimony taken subject to the objection.

Directly over the words "Exhibit No. 18," on page 392 of appellant's abstract, in the testimony of Edward G. Pratt, add the following:

"I have prepared a statement, taking as the basis of my calcula-

tion such a works as I gave in my testimony the other day, such a works as I would consider for Cedar Rapids, and I made a statement, based upon operation of such a works and of such a size, taking the future into consideration, I figured on the works of a total capacity of 750,000 cubic feet.

Q. You may take up the items which you have made a schedule under coal gas.

Objected to by defendants as incompetent, irrelevant, and immaterial, not a subject of expert testimony, and not applying to conditions here, of no aid to the court in determining whether this ordinance is reasonable or unreasonable; further it appears from the testimony that plaintiff has kept the set of books in which it claims to have correctly recorded all items that enter into the
821 cost of manufacturing and distributing gas in Cedar Rapids, and the testimony called for is speculative, is not the best evidence, and by agreement this objection shall apply to each and every interrogatory propounded to this witness, touching the matter of the ideal plant or the cost of manufacturing gas therewith.

Addition. At the end of the first paragraph on page 339 of the abstract, testimony of Edward G. Pratt, insert the following:

Q. You may state, Mr. Pratt, what your experience has been in plants that you have been connected with, with reference to rebuilding the same.

Objected to as incompetent, irrevelant and immaterial, and not applicable to the conditions at Cedar Rapids. It is not shown that the conditions at other places where this witness has had experience as gas engineer are applicable to the conditions at Cedar Rapids; that plaintiff claims to have kept a set of books in which are recorded all items of building and repairs and that set of books is the best evidence.

Insert directly above the words "Exhibit No. 20," on page 400, appellant's abstract of the record, the following from the testimony of Edward G. Pratt:

Q. Have you prepared a computation or schedule showing the prices or relative prices charged for gas in a city similar to Cedar Rapids in population?

A. The things contained in this sheet (Exhibits 20 and 21) have been taken from Brown's Directory in each case. Something over 25 to 30 towns and cities are represented. The purpose of each of these schedules is to determine the total population thereof,
822 the average population, the total send out, the average send out, the average price charged in these cities, the illuminating power of gas sold, the amount sent out per capita, and the amount sent out per capita in Cedar Rapids.

Defendants object to Exhibits 20 and 21 as incompet*ant*, irrelevant, and immaterial, for the reason that the information contained in these Exhibits is as accessible to the court from public records, as it is to the witness. Anything that the witness has selected from the record of certain towns is for the purpose of reaching a certain result by the selection of towns which are wholly inapplicable to plaintiff's system in Cedar Rapids, and is an attempt to confuse and

mislead the court as to the actual cost of manufacturing and distributing gas in Cedar Rapids; for the further reason that the price fixed by several gas companies in several towns named can not be made the basis of whether the rate *is* fixed in the ordinance is reasonable or unreasonable, in that condition as to the ordinance and prices and labor is different and is one depending upon the action of the several councils; for the further reason that it is not a proper basis for the court to determine the reasonableness of this ordinance on what gas companies generally receive for their output in other communities, and for the further reason that the testimony is hearsay and defendants ask that this objection apply to each and every question and answer put to or made by this witness, based on these schedules.

Directly above the said words "Exhibit No. 20," on page 400 of the appellant's abstract, the testimony of Edward G. Pratt, add the following: "Brown's Directory is looked upon as being a guide. I would not undertake to say that the book is correct.

823 The defendants object to Exhibit- No. 20 and 21 and all the evidence given in regard thereto, for the reasons given in the objections last above.

Add the following to the testimony of Edward G. Pratt at the bottom of the first paragraph on page 406 of the abstract:

"A new holder like holder No. 2 would be worth about $15,000.00. Masonry, tank and excavation, and piling under masonry work would cost close to $4,000.00; that would bring the total cost to $19,000.00, or $20,000.00. The information I have is that holder No. 2 has been in use 23 years. Applying my rule of depreciation from the beginning and figuring the depreciation at 3 per cent. on $16,000.00, we would have 23 times $490.00, which would be the actual depreciation. My rule, however, commences at the present time with the article in its present condition. I would make the depreciation the same if it was a new holder. Figuring the depreciation at 3 per cent. on the cost of a new holder, $19,000.00, the depreciation will be $570.00 per year. Assuming that the holder has been in use 23 years, and that it cost $19,000.00, the depreciation would amount to $13,110.00.

Q. To get the present value of that holder, you would subtract that from the $19,000.00, wouldn't you?

A. No.

Q. Why?

A. Because the holder has a present value equal to the value I have placed on it. It has just as much value for present uses as a new holder. I have fixed my value on the present holder for

824 the uses for which it is at present used. I did not apply my rule of depreciation because I did not think it was a fair rule to apply. I still insist that the present value of the holder is $15,000.00.

Correction. Correct the testimony of Edward G. Pratt as found on page 407 of appellant's abstract, by striking the answer set forth in the fourth paragraph on said page, and insert in lieu thereof, the following:

Q. You think it was fair to both the consumer and gas company to use one table of depreciation as applying to the running expenses of the gas company, and deduct that each year, but when you come to value that plant, to totally disregard that and to put very nearly a value of the plant as new, without regard to the time the plant or the parts have been used, do you?

A. I didn't consider the rights of the consumer possibly as religiously as I should in using this valuation.

In valuing this plant I have used my judgment for the present, and applied my rule for the future.

Further correct the testimony of Edward G. Pratt by striking out the following, commencing at the fifth line from the top of page 408: "Two-fifths inadequacy; 1/5 obsolescence; and 2/5 physical decay," and insert in lieu thereof, the following:

Q. What part of the 2½ per cent. depreciation on the retort house would be for physical decay?

A. Not to exceed one-fifth. In the cost of the coal shed, shop building, and of the store building, I would charge 2/5 to physical decay.

Addition. Add to the testimony of Edward G. Pratt, middle of page 408 of appellant's abstract, the following:

825 "To the boiler house, 22x27x9, I would give the physical decay 1/6, to inadequacy 3/6, and to obsolescence 2/6 of the amount I have charged for depreciation."

Corrections and Additions to Testimony of R. A. Wallace.

Correction. At the end of the first sentence on page 360 of the abstract, add the following:

"I know the location of the five lots situated on the opposite side of First street from the gas works."

Q. What do you value those lots at?

Objected to by defendants as incompetent, irrelevant and immaterial, it appearing that the company keeps a set of books in which is recorded the prices paid for those lots and in no case can it be said that said lots are worth more for the purpose of making gas than the company paid for them; and for the further reason that the lots situated across First street from the gas works are not used by the gas company and have never been used for the purpose of manufacturing and distributing gas, and there is no need or use for them by the said company.

Strike the two questions and two answers in the middle of page 361 of appellant's abstract of the testimony of R. A. Wallace, and substitute in lieu thereof the following questions and answers:

Q. So you can not tell the court how much you figure the brick at per thousand in the wall?

A. I gave this as my figure for the present worth of the building.

826 Q. You ought to know how many brick it would require.

A. I do know that is a part of my business, and what I keep to myself. This is a part of my trade, and that is the result.

Q. You are here as a witness and I want to know how many thousand brick there are and what you calculate them at.

A. The price of those walls is given here, and that is all it is necessary for you to know. My reputation as a builder and my reputation to get work and the fact that I am here under oath will have to go. The unit figure belongs to me.

Q. That is your testimony, is it?

A. Yes, sir.

Q. And you do not want to disclose that?

A. Sure not.

Q. Would not one team and a man practically excavate the whole thing in a day?

A. Perhaps a lawyer might get it out but I could not do it.

Q. You do not know how much there is there, do you?

A. I do.

Q. Well, tell to the court how much there are there.

A. I have told the court exactly what I am going to tell it. The excavation under the building is worth that much money.

827 Q. And you will not give us on cross-examination how much there was of it, or how much it cost a yard?

A. I am not going to give away my business, that belongs to me. If you want to get the unit price of a laboring man's labor that is the conclusion that I have arrived at. The legitimate conclusion of a legitimate contractor, and if you are not satisfied with it, you will have to be dissatisfied.

Correction to Testimony of J. C. Loomis.

Correction. Strike from page 370 of the appellant's abstract, testimony of J. C. Loomis, the second paragraph, and substitute in lieu thereof the following:

"'I do not know when any of these buildings were built, that is definitely. I have my judgment as to what the buildings are worth at the present.

Q. What is your judgment?

A. Well, as those buildings stand most of them are in very good repair, and I would depreciate the whole plant at 5 per cent., taking into consideration all that has been done in repairing the buildings. I think that would be a fair valuation of the buildings. I think if the company continues to repair them by doing the same amount of repair in the future that they have been doing in the past, they will keep them practically as good as they now are in a general way.

Corrections and Additions to Testimony of Geo. F. Kellogg.

828 Correction. Strike from the appellant's abstract the testimony of George F. Kellogg, the third paragraph on page 185, and substitute in lieu thereof the following:

"Interest on floating indebtedness was $142.29, on bonds, $3,788.75, net income was $25,437.49.

Q. I believe you said something about an item you said you

found that was not in there as charged off in this year, of some $5,627.00?

A. Yes, sir.

Q. Now, what was that for?

A. Why, as I understood it from Mr. Averill, I inquired into that, I understood that the difference between the old and new purifying room, as I recollect it.

Q. Will you deduct that from the $25,437.49 and show the net income with this item out?

Objected to by defendants as being improper to charge the cost of new machinery to operating expenses, and an attempt to swell the cost of manufacturing gas in that way.

A. After the deduction it is $19,810.49."

At the bottom of the first paragraph on page 187 of the appellant's abstract, correct the testimony of George F. Kellogg by adding the following:

Q. In making up this statement of additions to property did you include in either case anything in the way of additions on account of the Marion plant or property or extension?

A. No, sir, nothing that I could determine. Everything that was charged to Marion went into the Marion account. There was
829 a separate account called the Marion account. Everything that was charged to the Marion account went into that Marion account. Of course, I can't tell where a piece of pipe went on the pay roll.

Addition. At the bottom of page 187 of the appellant's abstract, cross-examination of George F. Kellogg, add the following:

"I had a real estate office in Chicago for two years. I have been with the old Rockford Insurance Co. 15 or 20 years as a general bookkeeper. The balance of the time I have been engaged in the real estate, or brokers in real estate, business. John R. Walsh is a stockholder in the Audit Co. of Illinois. Mr. Fred Plant is also a stockholder. He is also connected with Mr. Weldon in the Chicago National bank. I think about the only stockholders are Mr. Neisley, Mr. Weldon, Mr. Organ, Mr. Fred Plant, and Mr. John R. Walsh. Mr. Organ was also connected with the said bank, and with the Equitable Trust Co., as was Mr. Weldon. I have been connected with the Audit Co. of Illinois four or five years. Mr. Neisley is the certified accountant of the Audit Co. of Illinois.

Q. Has this Audit Company of Illinois ever been engaged in any public accounting in any shape or form except as it was promoted by these bankers, Walsh and others that you have named?

A. That is a hard question to answer.

Mr. Pratt secured me to examine these books. Not all of the 13 or 14 days spent in the examination of books, was spent in Cedar Rapids. I did not take any books to Chicago with me. The report was made in Chicago, but the basis for the report was gathered
830 here. Mr. Averill instructed me to limit my examination to two years, and that my examination should be from January 1, 1905, to December 31, 1906.

Correction. Strike from appellant's abstract the following sentence

at the bottom of page 189 of the abstract of the cross-examination of George F. Kellogg:

"They tested the meter and found that it was 4½ per cent. fast and they made the correction on the total but did not make it on the monthly statement. Made the correction on the yearly record only, which made a difference between the yearly and monthly record of about 2½ per cent., or about 2,000,000 feet," and insert in lieu thereof the following:

"There is a discrepancy between the special book showing gas manufactured for 1905 and the book which showed the make monthly. There was a difference in the totals as found in the yearly record book showing total gas manufactured and the footings in the book of gas manufactured by months. I ascertained this by adding the monthly manufacture and added the amount manufactured each month together and found they did not agree with the total as found on the yearly record. I asked Mr. Averill about it and he said it was due to a fast meter; that they tested the meter and found that it was 4½ per cent. fast and they had made the correction on the total, and did not make the correction on the monthly record. There was a difference of something like 2,500,000 cubic feet between the meter readings and the monthly account and the amount recorded on the book of the company. Mr. Averill told me about the meter test. It was not shown on the books. The gross amount
831 stated in the record was 86,723,100 and the total amount shown by the actual meter readings for the same time was 88,634,200, as I recollect it.

In making Exhibit 25 I accepted the explanation of Mr. Averill, and entered on the books of the company the amount manufactured as shown by the special book. I did not make any mention of this discrepancy in my report. I did not think it was important. Where I found the figures 86,273,100 cubic feet, I found there had been erasures. By making this change it would necessarily increase the amount of leakage. As I understand from Mr. Averill, early this year they put in a meter tester, and tested the meter, and found it was running 4½ per cent. fast. They went back to August, 1905, at the beginning of this new meter, and took it at the rate of 4½ per cent. for the balance of that year, which amounted to 2½ per cent. for the whole year and reduced the amount of gas metered to 86 millions. I understand they made this correction sometime in 1907 and since the pendency of this suit.

I made the entry of $1,088.00 for gas used at the works at the same rate that was charged the officers of the company. I did not see any reason why the works and the office should not pay for gas at the same rate. It makes no difference whether it was one dollar or two dollars, except that two dollars would increase the ratio per cent. of making gas. I did not find any item on the books of the company that the officers received gas for $1.00 per thousand. It was my own suggestion that the $1,088.00 was entered and reported.

In making this charge of $1,088.00 as a part of the expense of manufacturing gas, I did not enter it at the actual cost. If
832 it is entered at a sum in excess of the actual cost of producing gas, it would increase the expense of the company, and would

greatly increase, according to the books of the company, the cost per thousand cubic feet of manufacturing gas.

Addition. Add to the testimony of George F. Kellogg, at the bottom of the first paragraph on page 190, the following:

"The item of $161.48 for light used at the office is not on the books, it is an arbitrary amount, and by entering it as I have, it increases the cost of manufacturing and distributing gas. I think it is proper to add a profit to the actual expense of the company, and allow them to make a profit on their expense. By so doing it necessarily increases the cost of gas. By so doing it also increases the cost to the consumer, and by entering these items of gas used at the works and at the office, I thereby show an increase in the cost of producing gas.

At the bottom of the third paragraph on page 193 of the appellant's abstract, of the cross-examination of George F. Kellogg, add the following: "I took the statement of Mr. Averill for all that was lacking in the books. If an item of construction was charged to repairs it would make a difference. Expense for the construction or extension charged to repairs account would increase the cost of gas.

Add to the bottom of the first paragraph on page 195 of appellant's abstract, of the cross-examination of George F. Kellogg, the following:

"In getting the items I have named in repairs and renewals of mains as to the labor exhibit, Mr. Glenn Averill gave me the
833 names of the men employed on the streets and the wages they received. That was necessary for me to make the apportionment. But for the information I received from Mr. Averill I could not have made the apportionment I did from the books.

At the bottom of page 195 of appellant's abstract of the record, of the cross-examination of George F. Kellogg, add the following: "If the Annex property is not used for producing gas by charging the taxes to the company and crediting the income from the Annex it tends to show an increased cost of the production of gas. I treated it just as I found it on the books, and did not attempt to separate it.

Add to the cross-examination of George F. Kellogg, at the bottom of the first paragraph on page 197 of appellant's abstract, the following: "In my statement I have included $948.67 in the cost of manufacturing and distributing gas. This is the interest on the floating indebtedness, and includes interest on the $31,000.00 of money borrowed and put into the Marion plant. It is an improper charge and should not be charged to the cost of producing gas to the consumers of Cedar Rapids. This interest on the construction of the Marion plant should be charged to the Marion plant.

Add to cross-examination of Geo. F. Kellogg, at end of first paragraph on page 373 of appellant's abstract, the following:

December, 1902, at the close of that year, there was credit of $344.93 to the coal account. December 31, 1903, the credit to that account was $1,064.52; at the end of 1904, the credit to that account was $1,079.43. We have started with stock balance in the shed and

carried it forward from year to year, until the present time.
834 I took the coal charge to the retort house and credited it to the coal house. If they charged for the coal in the coal shed at one price, and charged it to the retort house at another price, it would account for the difference. There might be many ways of accounting for this difference.

Q. If this item (Shrinkage in Coal Account), which is carried here as the correct balance for coal, as a matter of fact can be shown by the books to be a result of charging two different prices between the coal shed, and the retort house, then the items in this sheet, Exhibit C, should be deducted should it not from the total amount of the cost of coal for the year 1905 and 1906, as entered by you?

A. That depends upon whether the prices are legitimate or not. If the prices charged to retort is not proper it should be.

Q. Assuming that they charged the cost of coal, F. O. B., at $4.15, and find they have a handling charge of 7c. a ton, making $4.22 a ton, then if in crediting it to the coal account, and charging to the retort house it is charged at $4.25, it is an improper charge, isn't it?

A. Assuming that the cost for the handling coal of seven cents, the rest might be accounted for as shrinkage. I have just taken what I found in the books here and put it in my balance sheet. I have not assumed or analyzed the account. The same is true of the oil account. The coal and oil accounts are kept in that manner. They carry oil and coal on hand and if there is any stock on hand that credit would be more. I took these two items aggregating $2,817.00, from this balance sheet and by using them in that manner it forms a part of the cost of making gas, and in making
835 my analysis it increases the cost of manufacturing gas about two-thirds of ten cents per thousand cubic feet.

Add to the cross-examination of George F. Kellogg, the answer to the first question shown on page 374 of appellant's abstract:

Q. If these books had been kept in the proper way, there would have been a way that you could have checked the consumer's ledger?

A. Yes, sir.

Correction. Strike from appellant's abstract of the cross examination of George F. Kellogg, the following sentence, commencing at the bottom of page 377 and ending at top of page 378: "I did not attempt to put every thing in my report that would tend to show that a 90c. rate was too low. I left out the item of $5,627.00 from the repair account," and insert the following:

Q. All the way through in examination of these books, you were careful to include any item that would tend to show that gas could not be furnished at 90c., and left out anything that would tend to show that it could be done for that?

A. I did for the $5,627.00, in leaving that out of the repairs account.

Addition. Add to the cross-examination of George F. Kellogg, at the bottom of the first paragraph of page 380 of appellant's abstract, the following: "The $5,627.00 has not been deducted, and enters into these other two items. The figures analyzed take that item into ac-

count. It is new machinery displacing the old. All I know
836 about this item is the memorandum that I referred to before.

Further Corrections and Additions to Testimony of Edward G. Pratt.

Addition. Add to the cross-examination of Edward G. Pratt, at the bottom of the first paragraph on page 410 of appellant's abstract, the following:

Q. I hand you the yearly report of 1906 and ask you if it is not true as shown by the gas company's books that the annual gas receipts for the year 1906 was $92,306,100 to the consumers of Cedar Rapids only?

A. Yes, sir.

Q. There is over 1,500,000 feet that was sold to Marion that is not accounted for in your Exhibits 14 and 15?

A. It is not, no, sir. So far as taking into consideration the 1,475,000 to Marion is concerned, Exhibit 15 and my calculation made thereon are incorrect, and it would be affected in this respect. It would reduce the 38.1c. per thousand cubic feet of gas sold 3-10 of a cent. In this computation I figure the cost to the company of the gas in the holder at 38.01c. In my inventory I put in the gas in the holder at one dollar to the company. That was just an arbitrary amount. It would be a little out of the way.

Correction. Strike from the appellant's abstract of the cross-examination of Edward G. Pratt, the paragraph commencing at the bottom of page 413 and ending at the top of page 414, and insert in lieu thereof the following: "Assuming that the company is selling
837 for 1907 from 100,000,000 to 105,000,000 cubic feet and basing the items of expense the same for 1907 as the actual items of expense for 1905, it would leave about $40,000.00 for the stockholders, and the persons holding the bonds. This is only an assumption.

I did not know that the cost for constructing the new purifying room was $9,427.02 until my attention was called to Mr. Kellogg's report, Exhibit I of Exhibit No. 25.

Addition. Add to the cross examination of Edward G. Pratt at the bottom of the fourth paragraph on page 114 of appellant's abstract, the following: "I value the new purifying building at $5,800.00, and the boxes at $5,000.00, making a total of $10,800.00. I did not know that that is $1,200.00 more than the books show they cost the company.

Q. You did not apply your rule of depreciation in valuing these did you?

A. My rule of depreciation did not begin when I made the valuation. My rule of depreciation commenced when I commenced to testify so far as I am concerned.

By placing the depreciation on the water gas apparatus at ten per cent., I mean that the ordinary life of the water gas apparatus is ten years. I have valued the water gas apparatus here at something like $5,000.00. I did not know that it had been in use over

twelve years. Its entire value has been replaced by charging the consumer ten per cent. depreciation. This water gas apparatus can be put in condition to operate.

838 I have charged off a certain per cent. of the pipe for obsolescence. I know of no material or apparatus that has supplanted wrought iron and cast iron pipe in the distribution system of a gas plant. There is no obsolescence in cast iron pipe, only in so far as its size and inability to perform work is concerned.

Add to the cross-examination of Edward G. Pratt, at the bottom of page 415 of the abstract, the following:

"The Barnes Drill Press which I have inventoried at $40.00, would cost new about $60.00. I think that would be discarded in about a year."

Q. Then why did you fix the value at $40.00, when it is not worth anything and should be discarded?

A. It is being used. Notwithstanding a new one could be purchased for $60.00, and this one will have to be discarded in a year, I fixed the value at $40.00 on this. Holder No. 2 will have to be discarded within a year or two or resurrected. I think that holder is worth $5,000.

Q. A holder of that size would cost $7,150.00, wouldn't it, as shown by Mr. Steinwedell?

A. $9,500.00 is a steel tank. If a bricked in tank, it would cost $1,500.00 more, probably. Assuming that a new holder like No. 2 would cost $9,500.00 and that it was built about 1872, the depreciation on that would be $9,575.00, according to my rule.

Q. In fixing your value then, why didn't you say no value?

A. Because it has a value. It has a tank there. I could not raise that holder to see how much it would cost to make that holder operative. There is a holder there and it has a value. As-

839 suming that it was built in 1872, that it is worth $5,000.00 today, the depreciation has only been about 1½ per cent.

I do not understand how long the water gas apparatus has been in use. I would place a value of $4,500.00 upon it, even though it has been in use ten years. It is worth that amount to repair and put in operative condition. Applying my rule of depreciation you will have a salvage value left. In some cases the salvage value will amount to 50 per cent. of the original cost. This — also true of Holder No. 2. If the policy of the Cedar Rapids Gas Light Co. of making extensions of their plant, instead of tearing them down, is pursued, I would not say what the salvage value of the building would be. According to my estimate the Cedar Rapids Gas Light Co. would be charging $450.00 per year depreciation on a piece of apparatus not in use. This would continue as long as it is not being used. This is also true of benches. If one-half of the things on which depreciation is charged could be eliminated, the depreciation would be cut in two. I think it is fair to the consumer that he should pay depreciation on machinery not used, like the old water gas apparatus. My recollection is that I applied the depreciation one-half to physical decay, and one-half to inadequacy, with no obsolescence.

Addition. Add to the cross-examination of Edward G. Pratt, at the bottom of page 417 of the abstract, the following: "The depreciation on pumps would be 4-5 physical decay; ½ inadequacy; depreciation on machinery is ½, physical decay and ½ obsolescence. Tools all to physical decay; meters, gauges and photometers 4-6 to inadequacy, 1-6 to obsolescence, and 1-6 physical decay.
840 Scales, horses and wagons, all physical decay. The ordinary life of a team of horses and harness is only about six years. Miscellaneous small pipe, physical decay 2-10 and 4-10 inadequacy, and 4-10 obsolescence. Wrought iron street mains, 3-6 inadequacy, 2-6 obsolescence, 1-6 physical decay. Cast iron pipe, 2-6 obsolescence, 3-6 inadequacy, 1-6 physical decay. Valves, specials, paving, 2-6 physical decay, 3-6 inadequacy, and 1-6 obsolescence. Contents of office and shop, all physical decay.

The paving on which I have charged depreciation is laid over the street mains and services. The gas company never purchased or paid for any of this paving. If the company has not paid for any paving, it is a question whether the gas company should be allowed for that paving.

Q. Assuming that all of that (paving over street mains and services), was laid after the gas pipes were installed, do you still think that item should appear in your inventory?

A. I do, yes. I think the consumer should pay a rate that would yield a return to profit for depreciation on such paving at a rate of $1,805.76 a year, without regard to whether the pipe was laid prior to the time or after the paving was laid. The rate should permit them to receive a return on the investment of the property owners in laying that paving. If there has been any advance in the value of the real estate that should not, according to my method, be deducted from depreciation on the works. If the gas company in 1898 purchased the Annex with the 13 small houses for $6,500.00,
841 which I had valued at $16,500.00, in arriving at the true depreciation I would not deduct that advance on such real estate from the amount set aside for depreciation, for I do not think it would be right. If a firm or individual anticipates its needs far enough in advance to acquire a piece of ground that is their gain. The consumer should be obliged to pay a rate to allow the gas company the additional profit on such real estate, and they should have the additional profits occasioned by the rise in the value of such real estate.

I have testified that the land owned by the gas company is becoming valuable because the town is growing to it. If the town had been growing away from the gas works, I would not have valued it so high. It makes no difference which way the town grows, the consumer must pay the bill. It makes no difference with me what the gas company paid for any of this real estate.

I presume that the values I have given for machinery I found in this plant, are as for new material.

Add to the cross-examination of Edward G. Pratt, to the second answer on page 421 of appellant's abstract, the following: "If the

pressure is properly adjusted all through the system, you would not find this black in the bottom of the globe or on the mantle."

Add to the cross-examination of Edward G. Pratt, at the bottom of the first paragraph, on page 423, the following: "I would apply my rule of depreciation as to the horses even though they had been used five or six years; and even though the consumers had paid for them by an allowance for depreciation, and it makes no difference if the team had been used thirteen years, I would put the valuation, and depreciation the same as I have.

842 I have worked for the McMillam syndicate. The condition so far as the cost of manufacturing and distributing gas in Cedar Rapids are not much different from the conditions I found at Clinton. Freight charges would be a little greater here is all, and the coke would be a little higher as a rule. Clinton is included in the list of gas companies given in my report which was taken from Brown's Directory. I do not believe the Clinton Gas Light and Coke Co. can pay $55,000.00 annual dividends after paying 5 per cent. interest on $350,000.00 bonds, and still sell gas at $1.00 per thousand; yet that statement is true according to Brown's Directory, which I used as an authority in getting information as to the price of gas, population, output, and the number of miles of mains, and as a basis for information as to prices at other places.

Add to the testimony of Edward G. Pratt the following objection to the question set out at the bottom of page 424 of appellant's abstract, the question and objection being as follows:

Q. You may state what, in your judgment, would be the cost of the manufacture of gas that was sent to Marion, cost of putting it into the holder.

Objected to by the defendants, because it is shown that they received $1.25 per thousand cubic feet for it.

Q. What would be the cost necessary to take it to Marion?

Objected to for the same reason and as incompetent and immaterial.

Correction. Strike from the bottom of the first paragraph on page 426, appellant's abstract, of the cross-examination of

843 Edward G. Pratt, the following: "I do not think any of the leakage should be charged to Marion more than that line that leads to Marion, the mains and services in Marion take care of themselves," and substitute the following: "In arriving at the leakage I did not take into consideration the fact that the pipe line leading from Cedar Rapids to Marion and the system of pipe in the streets of Marion is about 1/8 of the pipe in Cedar Rapids, including high pressure mains. The Marion system takes care of itself. I have taken into consideration some leakage. I applied the leakage only to the cost per thousand cubic feet.

Q. If you found that the mains in Marion including the high pressure mains in Marion was 1-5 of the total miles in Cedar Rapids, should you not charge 1-5 of the entire leakage to Marion?

A. I do not think that any of the leakage should be charged to Marion, more than that line that leads to Marion. There are no

meters between the works and the consumer's meters at Marion. I have taken half of the 23,000 feet high pressure mains and have taken for granted that there are sales of 1,147,000 cubic feet and I have figured .0347c. off of that amount for leakage. I have computed the leakage only on the high pressure mains and have not computed it on the rest of the system in Marion, because there is no way to do it. If I had the figures I could compute it on the balance of the system in Marion the same as I have on the high pressure system.

844 *Corrections and Additions to Testimony of George T. Hedges.*

Correction. The testimony of George T. Hedges as to the value of the gas works lots shown on page 426 of appellant's abstract, was taken subject to the objection that the testimony was incompetent, and immaterial, for the reason that the plaintiff purchased the property for the purpose of conducting a gas business thereon and has the cost of said lots, and that the lots are worth no more for the purpose of manufacturing and distributing gas than was paid therefor.

The testimony as to the lots across the street, known as the Annex was taken subject to the same objection, and for the further reason that it appears from the evidence in this case that no part of the said lots are used for manufacturing and distributing gas, and it is not contemplated to use said lots for such purposes.

Addition. Add to the first paragraph on page 428 of appellant's abstract, of the redirect examination of George T. Hedges, the following: "If the gas company had made land on these lots on the river bank until these lots were about 200 feet deep, that would add to the value of the property.

Corrections and Additions to Testimony of Glenn M. Averill.

Correction. Correct the testimony of Glenn M. Averill as to the cost of manufacturing gas as shown on page 250 of the abstract, as follows: Strike the following: "That makes the manufacturing cost $38.06," and insert in lieu thereof, the following: "That
845 makes the manufacturing cost 38.06c. per thousand cubic feet of gas sold."

Addition. Add to the testimony of Glenn M. Averill, at the middle of page 251, the following:

"Plaintiff now offers in evidence Exhibit No. 32."

Exhibit 32 is objected to by the defendants as being incompetent, irrelevant, and immaterial, and not the best evidence. It is not shown that the books from which the same are taken are the books of the company, or that the items recorded therein were recorded by the witness or are correct; it is not the best evidence.

Testimony taken subject to the objection.

Correction. Strike from the middle of page 251 of appellant's abstract the following: "And a floating debt of $6,000.00, too," and insert in lieu thereof the following true answer: "There is something between $5,000.00 and $6,000.00 of floating debt."

Addition. The evidence abstracted in the last paragraph on page 252 of appellant's abstract, testimony of Glenn M. Averill, was taken subject to the objection of the defendants that the same was incompetent and immaterial, the record of the company being the best evidence of the cost of the plant, and the additions made thereto, the said record showing facts altogether different and contrary to the facts testified to by the witness, and for the further reason that the record shows that nothing was contributed to the plant by the stockholders except what consumers paid as an unreasonable profit on gas used.

846 Correction. Correct the testimony of Glenn M. Averill at the middle of page 253 of the abstract, as follows: Strike from the testimony of Glenn M. Averill as shown at the middle of page 253 of appellant's abstract, the following question:

Q. What income, in your judgment, should the capital which is represented by the bonds earn," and insert in lieu thereof the following:

Q. Mr. Averill, assuming that the plant in Cedar Rapids has the value of $375,000.00, then that capital could be represented by $75,000.00 of bonds and $300,000.00 would be the ordinary capital belonging to the stockholders, now what should that capital, that is what rate of interest or income should the capital represented by the bonds bear, and what should the capital represented by the balance of the capital bear, in your judgment.

Objected to by defendants as incompetent, and immaterial and calling for the witness to pass upon a subject which he has not shown himself competent to pass judgment on, the only question being whether there is a substantial amount left over after the payment of the expenses of the company; and calling for the witness to decide the ultimate facts to be determined in this case by the court, and not a subject of expert testimony. And agreement this objection shall stand to all interrogatories propounded to and all answers given by this witness touching this matter.

Addition. Add to the testimony of Glenn M. Averill, as to the dividends declared and paid by this company, page 261 of appellant's abstract the following: "The record of dividends

847 will have to be taken from the record book. I will have to see that book. It is a book recording the action of the meetings of the stockholders and meetings of directors. My cash book don't go back that far. The cash book would show it, but I don't have the cash book back to 1887. This will show in the record book all right for a long ways, and then it gets mixed and I can't find it. One per cent. dividend was declared by the directors in 1877, 1878, 1879, 1880; in 1881 and 1882 the dividend was two per cent. In 1883 it was one per cent.; in 1884 it was four per cent. I do not find any record of dividends from that time on. The next one is for 1894, which is two per cent. Written reports were not made on all those years. The record of the office for those years is the one I referred to which was left at the office and probably lost or destroyed. I think there was a dividend in 1891 and 1892 of one per cent.

Add to the cross examination of Glenn M. Averill, as shown at the bottom of the first paragraph on page 262 of appellant's abstract of the record, the following: "We purchased lots 1 and 2 in fractional block 10, from G. F. Van Vechten for $3,000.00. We intended to put the gas holder on the property known as the Annex, which we purchased from Mr. Keith for $6,500.00 in November, 1898. The Annex has never been used in the business of manufacturing or distributing gas up to the present time.

When this ordinance was passed, the gas company owned this property and had invested in it $6,500.00, and had not up to that time, nor has it since used this property in the gas business. When we entered in the books the income of $292.00 for 1905, and —

848 $529.99 for 1906, with reference to the rentals for these houses on the Annex, that was the amount received over and above the amount paid out for repairs and over and above the expenses of carrying it, and taking care of it."

Referring to the ledger account of the Annex, the witness further testified:

Q. Can you tell whether the taxes were charged there? Is there any item that indicates that the taxes were charged?

A. No, I can't tell, it was all put down as such expenditures and I can't tell whether it was for the cement sidewalk or for taxes. Of course, the taxes would have to be a larger item than paint or glass. After examining the account I can't tell whether the taxes are entered here or not. I would have to look at the cash book. In 1906 the only entries that I can find, covering taxes, are charged to expense account. In the expense account in the manufacture of gas is the account covering expenses and interest.

Q. Then the fact is that the taxes on this Annex have been entered up in the gas works account as an item of expense?

A. If it was in the gas works account. I do not know."

Add to the cross examination of Glenn M. Averill, at the bottom of the fifth paragraph on page 282, of appellant's abstract, the following:

"Probably some of the 2109 meters in use in 1902 have been discarded, but I can't tell how many have been discarded. We have had to purchase new meters to replace any that have been discarded since that date."

849 Correction. Correct the cross-examination of Glenn M. Averill in the second paragraph on page 283, as to the installation of station meter, as follows:

"Q. Now, there is a new station meter down there at the works, is there, that cost $2,100.00?

A. Yes, sir; that was put in in the summer of 1905. The two-ton dray was purchased since 1902. One of the fittings wagons was purchased about three or four years ago, and one was purchased last year. They cost about $90.00 each, without the iron device in the bottom, which cost about $10.00 or $12.00. One of the horses is an old horse, and the heavy team is a young team. One of the medium horses we have not had very long. The young team was purchased two or three years ago. I would say that about $1,000.00

of the $1,185.00 inventory value of the contents of the stable has been put in since 1902. The two lots 1 and 2 in fractional block 10, purchased from Mr. Van Vechten at $1,500.00 each, were paid for in 1903.

It looks like the account of Marcus Hall for $314.10 was charged to repair account. It would go into the account of repairs and renewals. Apparently $214.10 was charged to repair account and $100.00 of it to gas works, but I do not see why the bill should have been divided $314.00, and only $214.00 as shown by the books is charged to repairs.

Q. If these items, like the contents of this office, and many of these other things that you have in this inventory, are in repairs and renewals account, they should not be in this inventory, should they?

A. They are a part of the property of the company.

850 Q. But if they have been put in as repairs and renewals they have been paid for by the consumer and gone into the cost of gas?

A. I think they should appear in the inventory as property."

Defendants offer in evidence as a part of the cross-examination of Glenn M. Averill, "Exhibit G," being the bill of Marcus Hall. Also add:

"Charging the bill of $314.10 of Marcus Hall for the new counter, price of railing, etc., to repair account amounts to the same as charging them to depreciation.

Q. But you have charged off depreciation independently of the 5 per cent.?

A. On the gas works.

Q. But that includes all this property.

A. Yes, sir; but the office property is a very small account. In making up my statement to show the cost of manufacturing and distributing gas, I have taken it by this method.

The item of 12 inch and 16 inch valves including connection pipes at inlet, valued in inventory at $840.00 was purchased in 1906. Of the buildings the following have been erected since 1902. Addition to retort house, steel coal shed, purifying house, boiler room and governor pit; one ammonia cistern has been built since 1902 and a little tar well forming a part of the ammonia tank was built at the same time. It is called tar well."

Addition. At the end of the first paragraph on page 289 of the re-direct examination of Glenn M. Averill, add the following:

851 "Q. Mr. Averill, you may state what the rate of the Cedar Rapids Gas Light Co. originally was; what reductions have been made from time to time in the rates as charged to its consumers?

Objected to by defendants as not being the best evidence. The book that the witness is reading from is a book compiled by the Milwaukee Gas Co., and the testimony is incompetent, irrelevant, and immaterial and not re-direct examination.

A. The original price when the works started was $4.50 per M

c. f. This report that I compiled for the Milwaukee Gas Co. when requested information back to 1885; the price of gas in 1885 was $2.250."

Correction. Strike from the top of page 297 of appellant's abstract, objections to Exhibit 50, said Exhibit 50 being the interrogatories and answers thereto, filed in the said cause as ordered by the court and substitute in lieu of the said objections the following concession and objection:

Concession.

It is conceded that Mr. A. T. Averill who made answers to the interrogatories just offered in evidence is the same person who just left the witness stand, in this case, and that he is at present in the court room.

Defendants object to Exhibit 50 as incompetent, irrevelant, and immaterial. The officer who made the affidavit to such interrogatories being in the court room, and can give the testimony if called upon. Said interrogatories and answers are not best evidence and the same is hearsay. That the said interrogatories and the
852 answers of plaintiff made thereto on the application of the defendant are not competent to be introduced or used in behalf of plaintiff for any purpose, it appearing that the plaintiff, by its president, A. T. Averill, and its secretary, Glenn M. Averill, are present in the court room at this time and at the time the offer is made, and that the said interrogatories can only be used by the defendants in its behalf where the person answering the interrogatories is present in court. And for the said reasons objection is made to said Exhibit 50 and any inquiry with regard to said Exhibit. Testimony taken subject to the objection.

Addition. Add to the bottom of the third paragraph on page 291 of appellant's abstract, testimony of Glenn M. Averill, the following:

Cross-examination:

"Mr. Pratt suggested to us where we could get a meter prover to prove the station meter. I do not remember when it was Col. Pratt suggested to us where we could get a meter prover; he said he would look one up for us. I do not remember when he notified us that he had found one. The meter prover came in June, 1907.

Col. Pratt, told us of witnesses; he did not have anything to do with them. The meter prover was ordered from the Maryland Meter Co. in Chicago, by Col. Pratt. When he was here he told us that he could get it; then he went ahead and ordered it shipped.

I assisted in the preparation of the answers to the interrogatories filed in this case. I furnished the information in the answer to Interrogatory 13.

853 Q. Coming to January, 1905, on page 7 of answers to interrogatories, that from and after the month of January, 1905, and including the year 1906, the full meter rates were charged the patrons of the Cedar Rapids Gas Light Co., to-wit: General gross rate, $1.25; general net rate, $1.15. After a consumption of 20,000

c. f., and less than 40,000 during the month, the gross rate is $1.25 and the net rate $1.10. If more than 40,000 c. f. are consumed, and less than 50,000, the gross rate is $1.25 and the net rate is $1.05. If more than 50,000 c. f. are consumed then the gross rate is $1.25 and the net rate $1.00. The Cedar Rapids Gas Light Co. has no special consumers who are charged a less meter rate than that stated herein, except that the employés of the company, who were and are charged the rate of $1.00 per thousand cubic feet of gas consumed. That was correct, wasn't it at the time it was given?

A. That is the answer.

Q. And it was correct, wasn't it?

A. Yes, sir.

Q. The American Cereal Co. would have paid you over $400.00 for the month of December if they had paid this rate, would they not?

A. Yes, sir, $408.20.

At the time I had the conversation with Mr. Campbell, the chairman of the Light and Water Committee of the City Council, I do not think anybody was near enough to hear what was said, because of the noise in the engine room at Mr. Campbell's office in the American Cereal Co. Mr. Campbell was then a member of the City Council. Mr. Campbell told me he had not investigated the report of Fuertado.

854 In making the exchange of the boilers with the American Cereal Co. I think the boilers cost us something like $1,400.00; in addition to the boilers we gave Mr. Carmody."

Corrections and Additions to Testimony of A. T. Averill.

Correction. Correct the testimony of A. T. Averill as shown at the top of page 292 of the abstract, as follows:

Q. What was paid for the plant by the Higleys and yourself, if you know, and those who became the owners of it at that time?

Objected to by defendants as incompetent, immaterial and not the best evidence, the record showing that the plant was not transferred, but only the stock of the corporation was transferred.

Testimony taken subject to the objection.

A. The half interest that I negotiated for, the stock cost us $16,000.00.

Correction. Correct the testimony of A. T. Averill as shown at the top of page 293 of appellant's abstract of the record, in the matter of the value of real estate, as follows:

Q. What in your judgment are the lots known as 1, 2, 3, 4, and 5, in fractional block 9, worth?

Objected to by defendants as being incompetent, irrelevant, and immaterial for any purpose, the records showing what the lots cost, and for the purpose of manufacturing and distributing gas,

855 and in no case can the plaintiff claim any greater value than the cost of the property in question; and by agreement this objection shall be carried to each and every interrogatory put to

this witness and the answers thereto, touching the value of real estate.

Addition. Add to the end of the second paragraph on page 294 of appellant's abstract, and before the answer at the top of said page, the following:

"Objected to by defendants as incompetent, irrelevant, and immaterial for any purpose, the only question before the court being whether there is a substantial amount left over after the payment of costs of running the plant, and interest on the investment, and it is wholly incompetent and immaterial, the rate of interest charged in various enterprises; and being of no value or aid to the court in determining this question of the price of gas.

Addition. After the question contained in the third paragraph on page 295 of appellant's abstract, of the testimony of A. T. Averill, add the following objection:

Objected to by defendants as incompetent, and immaterial, and not proper basis for determining the reasonableness or unreasonableness of the ordinance in question. It calls for a comparison and is based on figures that cannot be produced; and calls for hearsay testimony.

I am a director of the Pawnee Cereal Mills, also interested in the Pawnee Land Co. I have handled a great many thousand acres of what is called southwestern land. I organized the Montrose Hotel Co. and gave the building of that attention. I have been director in the Economy Furnace Co. Have been for a number of
856 years interested in buying and selling real estate in Iowa, Minnesota, Mississippi, Louisiana, Kentucky, and Florida. I have also been carrying on a farm and raising stock. Have been connected with the consolidations and absorptions of the telephone company, of which I am an officer and director; it is one of the large competitors of what is known as the Bell Telephone Co. For a number of years I have also been engaged in the manufacture of wagons.

Correction and Addition. After the offer of Exhibit 47 as shown on page 428 of the appellant's abstract, insert the following:

Objected to by the defendants as being incompetent, irrelevant, and immaterial, for the reason that the said ordinance is set out in the petition, admitted in the answers, and expired long before the passage of Ordinance 752.

Correction and Addition to Testimony of H. S. Keffer.

After the offer of Exhibit No. 48 as shown on page 428 of the abstract, add the following from the testimony of H. S. Keffer:

"I do not know who made the several interlineations as shown in the original ordinance; they were in that condition when the book came into my custody as city recorder. From appearances, they were evidently made after the ordinance was recorded and signed. The body of the ordinance is in ink, and the interlineations appear to be in the handwriting of J. D. Blaine."

Also add the following objection to the offer in evidence of Exhibit No. 48:

857 Objected to by the defendants as being incompetent, irrelevant, and immaterial, in that it appears that the ordinance has been changed and altered and interlineations have been made therein since it was recorded and no explanation has been made why the alterations and interlineations contained in the ordinance were made or by whom made, so that the ordinance as now offered does not purport to be, on its face, the ordinance that was passed by the City Council and signed by the Mayor and attested by the Recorder. Testimony taken subject to the objection.

Exhibits F and H are a part of the published proceedings of the City Council of the City of Cedar Rapids. Mayor Connor's inaugural address is found on pages 1, 2, and 3 of Exhibit F and Exhibit F is a part of the official records. It was printed in the official paper of the City Council of Cedar Rapids, at the time.

Defendants offer in evidence as a part of the cross-examination of Glenn M. Averill the papers marked Exhibit F and Exhibit H.

Testimony for Defendants.

Corrections to Testimony of J. P. Messer.

Correction. Strike the second sentence at the top of page 431 of the cross-examination of J. P. Messer, as follows:

"Two or three years ago I bought and sold lots just below A avenue," and insert in lieu thereof, "Two or three years ago I bought and sold lots just below Ninth avenue."

858 ### *Corrections and Additions to Testimony of T. E. Ravenscroft.*

Addition. Add to the testimony of T. E. Ravenscroft, just before the words "Cross Examination" the following: "The lots of the gas company each have an average frontage of 60 feet on First street."

Correct the cross examination of T. E. Ravenscroft as found in the first paragraph of page 432 by striking out the following:

"I would not think they were over 15 to 60 feet. My valuation was based upon the depth of the lots as they are," and insert in lieu thereof the following:

"From the looks of the plat I would not think they were over 15 to 60 feet, but my valuation is based upon lots between Seventh and Eighth avenues, on an average depth of 125 feet. I did not take into consideration anything about the meander line. I know nothing about this line, except as is shown by the plat. I know of tracts of the size of the gas works real estate that can be purchased for a valuation similar to the one I have placed on this property."

Add to the appellant's abstract of the testimony of T. E. Ravenscroft, the following:

Redirect examination:

Directly across the river from the gas works is a tract of 12 acres that was purchased by Douglas & Co. for $10,000.00. This would be suitable for gas works. I understood this property sold for $10,000.00.

859 *Corrections and Addition to Testimony of I. W. Darr.*

Addition. Add to the testimony of I. W. Darr, at the bottom of the first paragraph on page 439 of appellant's abstract, the following: "My figures include a profit of 10 per cent. over and above the actual cost.

In figuring the replacement value of these buildings I did as I have always done, that is, I went to the different contractors that take different classes of work and got their bids for the iron work, steel work, brick work, masonry work, and then figured the carpenter work. I have always found that a safe way to take a contract."

Correction. Correct the cross-examination of I. W. Darr by striking from the middle of page 442, the following:

"The "I" beam is 9 feet high. The stenographer has failed to put this in Exhibit P," and insert in lieu thereof the following:

Q. How wide is the "I" beam?

A. It is 8 inches, I think—that the stenographer has failed to put in here. The stenographer failed to put in the figures here. They are 26 feet long.

Addition. Add to the first paragraph on page 442 of the appellant's abstract, of the cross-examination of I. W. Darr, the following:

"I also had the mason who always does my work figure on the footings and the concrete wall for the purifying building, that is Bert Smith. He has done a good deal of work for me. He built the concrete wall under my barn. My estimates include foundations for machinery.

860 Correction. Correct Exhibit S, assessment rolls shown on pages 446 and 447 of appellant's abstract, by inserting the following at bottom of first paragraph page 447 (erroneously paged in abstract at 747):

"Total valuation of all property, $99,020.00; net actual value of all property, $99,020.00."

Correction. Correct Exhibit U, page 448 of appellant's abstract, by inserting the following figures as to Assessment Rate of the property of the Cedar Rapids Gas Light Co., for the year 1905:

"Total value of personal	$300.00
"Total value of real estate	70,000.00
"Total actual value of property	70,300.00
"Net actual value of property	70,300.00
"Net taxable value of all property	70,575.00

"STATE OF IOWA,
Linn County, ss:

"I, Cedar Rapids Gas Light Co., do solemnly swear (or affirm) that the above is a full, true and correct statement of all moneys

and credits owned by me, and that the liabilities above given, to be deducted therefrom are obligations in good faith, actually owed by me. Also that I am the person assessed on the opposite side of this assessment. That I have read the said roll of property listed and assessed to me, that the same is a full, true, and correct list of my taxable property both real and personal, subject to taxation in this district, and all property which should be listed on this assessment roll to me or by me.

CEDAR RAPIDS GAS LIGHT CO.

"Subscribed and sworn to before me by A. T. Averill, President, this 28th day of January, 1905.

861 "J. H. HAZELTON,
Assessor, Cedar Rapids."

There is a further assessment for the year 1905 as shown on Exhibit U, against the Cedar Rapids Gas Light Co., on lots 1 and 2, fractional block 10, of $25,000.00, making a total net value of all property, $95,300.00. The oath on the back of the second sheet of Exhibit U was taken by A. T. Averill and was administered on the 28th day of January, 1905.

Corrections and Additions to Testimony of C. H. Campbell.

Correction. Strike from the bottom of page 449 of appellant's abstract, the testimony of C. H. Campbell, the following:

"I have no copy of Exhibit S at the time the ordinance was passed, except that I had read it, or practically the same thing that was printed in the newspapers; had no copy of Fuertado's report which was the same in my opinion as was contained in Exhibit Y," and substitute in lieu thereof, the following: "I had no copy of Fuertado's report, Exhibit F, prior to the passage of the ordinance, except that I had read it, or the same thing in the newspapers. As I remember Fuertado's report fixed the cost of manufactuing and distributing gas at 60c. per M. c. f. I saw Mr. Glenn M. Averill after the passage of this ordinance at my place of business quite frequently, sometimes three or four times a week.

Q. Did you ever say to him that the council was hasty and never investigated the cost of manufacturing and distributing gas?

A. No, sir.

862 Q. Did you ever have a conversation with him in which you made the statement in substance that the council had been hasty and had not entered into the matter of the cost of manufacturing and distributing gas?

A. No, I did not.

Correction. Strike from the cross-examination of C. H. Campbell, page 450 of the abstract, the following: "I believe the price at Council Bluffs was $1.50; at Des Moines, $1.25. I am not competent to state what gas cost or how they should sell it any other place. My judgment was based on the prices that we got of the cities, and this engineer that was here," and substitute in lieu thereof the following:

"I believe that the price at Council Bluffs was $1.50. I could not say positively. At Des Moines I think it was in the neighborhood of $1.25. I am not competent to state what gas cost or how they should sell it any other place. My judgment was based on the prices we got from these experts that we got here during the Huston administration. That is what it was based on. I could not say what the price was at Dubuque. My recollection is that it was $1.00."

At the bottom of page 451 of the cross-examination of C. H. Campbell, add the following:

"By the COURT: This ordinance that Mr. Averill presented to you, was that after this ordinance was passed by the council?

A. Yes, sir. Mr. Averill brought that ordinance down to me, as chairman of that committee, to see if we could compromise. That was after the passage of this ordinance.

863 My conversations with Mr. Averill with regard to the ordinance which Mr. Averill gave me, were long after this suit was commenced, and after this ordinance was passed by the City Council.

Corrections and Additions to Testimony of C. J. Fox.

Correction. Strike from appellant's abstract of the testimony of C. J. Fox, at the top of page 454, the following: "I have seen electrolysis in other places," and substitute in lieu thereof the following: "I have had charge of these mains since 1878 and the water works system and the one instance which I have mentioned is the only time that I have ever seen any effects of electrolysis on the mains here. I have seen it in other places, but not in Cedar Rapids."

Correction. Strike from appellant's abstract of the cross-examination of C. J. Fox, the following on page 458:

"Assuming that the ordinance in controversy fixed the rate at 90c. without a discount, and makes no provision for penalty for prompt payment, in my judgment it would be necessary for the company to make some discount below the 90c. rate or add something to its expense for collecting," and substitute in lieu thereof the following:

Q. Now, assuming that the ordinance in controversy in the present case provides that the company shall furnish at all times to its patrons gas at 90c. per M. c. f. and makes no provision for a penalty for failure to make prompt payment, in your judgment would

864 it not be necessary to make a discount below the 90c. or to add something to its expense of collecting?

A. I would say this, that it would be necessary to have either one or the other. It is a good thing to have both, if you can't cut off on the one hand, then the penalty would have to come.

Addition. At the bottom of the recross-examination of I. W. Darr and substitute in lieu thereof, the following:

"In computing the prices for the concrete work in the buildings of the gas company, I secured the prices for standard mixture of concrete."

Correction. Strike from the redirect examination of C. J. Fox, near the top of page 460 of the abstract, "Exhibit V is the notice that the

water company sends out, stating that the water will be turned off. Defendant offers in evidence Exhibit V," and substitute in lieu thereof, "Exhibit Y is the notice the water company sends out stating that the water will be turned off. Defendant offers in evidence Exhibit Y."

Corrections and Additions to Testimony of H. L. Nehls.

Correction. Correct the testimony of H. L. Nehls on the middle of page 462 of the abstract, by striking out the following:

"Assuming the lots are 60x120 feet, they would in my opinion be worth from $1,500.00 to $1,600.00, and possibly $1,800.00 each,"

and substitute in lieu thereof, the following:

865 "Assuming the lots to be 60x140 feet, they would in my opinion be worth from $1,500.00 to $1,600.00, and possibly $1,800.00 each."

Strike from the bottom of page 462 of appellant's abstract of the cross-examination of H. L. Nehls, the following: "The lot had a house, was 60x120 feet," and substitute in lieu thereof, "the lot was 60x140 feet. There was a house on the lot of about 15 rooms."

Correction. Correct the third letter of Exhibit Z, commencing on the bottom of page 471 of appellant's abstract, by striking out the said letter, which is — follows:

"Replying to your letters of July 17th and September 28th, addressed to the American Cereal Co., we accept your proposition and request that you kindly get the necessary material for making connections and have the same installed with all possible haste. American Cereal Co." And insert in lieu thereof the following:

"Kindly referring to your letters of July 17th and September 28th, addressed to the American Cereal Co. of Cedar Rapids, relative to supplying them with gas, our understanding of the proposition is as follows: On the consumption of 50,000 c. f. per month we secure a net rate of $1.00; on the consumption of 300,000 c. f. per month we secure a rate of 95c. per M c f., and on the consumption of one-half a million c. f. we secure a net rate of 90c., and you agree to furnish gas at street point we designate, and we to pay you the cost of putting in this pipe, but the same will be repaid to us by you, allowing us credit of one-half the monthly gas bills until such time as this credit will equal the cost of the work you have done. If this is your understanding of the proposition, we accept the same

866 and request that you kindly get the necessary material for making connections and having the same installed with all possible haste, and oblige,

"THE AMERICAN CEREAL CO."

Corrections and Additions to Testimony of James Hall.

Addition. At the end of the fourth paragraph on page 499 of appella*tn*'s abstract, testimony of James Hall, add the following:

"In preparing my report K-2, I had a copy of the interrogatories and answers thereto, made by A. T. Averill in August, 1907. In

my report I made mention of valuations of the physical property of the gas company. I took this schedule from the answers to the interrogatories made by A. T. Averill, dated August 9, 1907, and filed in this case; the same being Exhibit No. 50, and wherever I have referred to the affidavit of A. T. Averill in my report I have reference to the answers to the said interrogatories now marked Exhibit 50."

Correction. Strike from the seventh line on page 502, testimony of James Hall, the figures $56.20, and substitute in lieu thereof $5,627.00.

Addition. Add to the bottom of the first paragraph on page 502 of appellant's abstract of the testimony of James Hall, the following: "At the bottom of page 11 of my report I called attention to an item of $29,384.00, the value of 3,811 meters. The books show that the expense of setting these meters has been charged to fittings account.

"I excluded from the accounts of the company, all of their charges for depreciation as follows: For the year 1902, $10,000.00;
867 year 1903, $20,000.00; 1904, $12,500.00; 1905, $10,000.00; 1906, $13,000.00; total, $65,000.00. The items of depreciation contained in the books were arbitrary charges and by including them in the account I could not determine the actual cost of gas in Cedar Rapids. They were not computed on any scientific basis or with regard to the capital invested."

Correction. Strike from the top of page 514 of the abstract of the testimony of James Hall, the following:

"The Annex had some wooden houses that were being rented. It had never been used for manufacturing purposes," and insert in lieu thereof the following: "The Annex had some wooden houses that were being rented to outside parties. It had never been used for the purpose of manufacturing or distributing gas by this company, or any other company."

During the time that I have been engaged in the business of a chartered accountant, I have examined several hundred sets of books. I have become familiar with the amount of work that is necessary to keep a set of books such as is used by this company, and the necessary expense of running an office of this kind. Apart from the officers' salaries and the salaried meter boys, it would cost about $150.00 per month to run this office.

Strike from the bottom of page 504 of appellant's abstract, the testimony of James Hall, the following:

"I would say that the reasonable cost to run the office would be $150.00. A stenographer and journal bookkeeper at $60.00, and two meter boys who would work one week each month at $10.00 per week," and insert in lieu thereof the following:

868 "Apart from the officer's salary and paying the meter boys, it would cost about $150 per month to run that office. It would require a cashier and bookkeeper at probably $90.00 per month; a combined stenographer and journal bookkeeper at $60.00 per month. I think two meter boys at $10.00 per week, who would work one week each month could do the work."

Addition. Add to the bottom of the first paragraph on page 506 of appellant's abstract, testimony of James Hall, the following: "When I examined the works the other day, I found but one bench of 9's in use. There are three benches of 9's and three benches of 6's. My recollection is that only 20 per cent. of the actual gas apparatus of the company was being used. I have visited the works twice. I found the same condition there on both occasions.

Correction. Strike from the ninth line from the bottom of page 506 of the appellant's abstract, the testimony of James Hall, the following: "I have excluded nothing else," and insert in lieu thereof the following: "In making my computation on page 14, to ascertain the cost per M. c. f. for gas for the years 1902 to 1906 inclusive, I have taken the figures from the books of the company, and excluded nothing." (Trans. 447, bottom and 448 top).

Addition. Add to the bottom of the first paragraph on page 507 of appellant's abstract, of the testimony of James Hall, the following: "Without considering the item of depreciation the actual cost to the company for manufacturing gas as shown by their books was as follows:

869

1902	30.19c. per M c. f.
1903	33.33c. per M c. f.
1904	37.53c. per M c. f.
1905	33.68c. per M c. f.
1906	33.11c. per M c. f.

"To these amounts I have added 5c. per M. c. f. for depreciation, which amount I have set out in the second column of page 2 of my report, Exhibit K-2. The total repair account as shown by the books of the company for those years in cents per M. c. f. of gas distributed, is as follows:

1902	2.29c.
1903	4.13c.
1904	2.27c.
1905	11.30c.
1906	10.08c.
Making an average	6.85c

"I have allowed the officer's salaries to stand as shown by the books.

"The total cost to the company of gas sold by it is shown in detail on page 15 of my report K-2. The total cost of manufacturing and distributing gas, including actual depreciation, exclusive of interest for five years, is as follows:

1902	57. c. per M c. f.
1903	59.39c. per M c. f.
1904	63.75c. per M c. f.
1905	67.45c. per M c. f.
1906	68.12c. per M c. f.

An average for five years of..... 64.04c."

870 Correction. Strike from the second paragraph on page 507 of appellant's abstract, the testimony of James Hall, the following: "The fittings account was slightly higher in 1905 than in prior years," and insert in lieu thereof, "The fittings account was considerable higher in 1905 than in prior years, which would make the cost more for that year and this increase of the fittings and repair account for 1905 would more than take care of the increased cost of manufacuring gas during those years, over the three preceding years."

Strike from the last paragraph on page 507 of appellant's abstract, testimony of James Hall, the following:

"There would have been received and charged to a fund to take care of depreciation during the five years under review, based on 5c. per M c. f. allowed by me, ledgers in order to ascertain whether the gas mentioned in the record book had all been sold and it was impossible to check that with any degree of accuracy as far as I could ascertain there should be considerable more money represented in the books than was represented," and insert in lieu thereof the following:

"For the years in review, 1902 to 1906 inclusive, there would have been received and charged to a depreciation fund, based on the allowance of 5c. per M c. f., $19,397.03. I made an examination of the consumer's ledger in order to ascertain whether the gas mentioned in the record book had been sold, and see if more had been sold than was recorded therein. It was impossible to check this with any degree of accuracy, but so far as I could ascertain, there should

871 be considerable more money received than there was represented on the books."

Correct the first paragraph on page 509 of the appellant's abstract, of the testimony of James Hall, by striking out the following:

"In the schedule on page 22 of my report, "Net cost—M. & M. cost," represents the cost to the company after the reduction of residuals and "M. & M." is our own cost, after making the examination, after excluding the company's charges and substituting our own," and substitute in lieu thereof the following:

"At the bottom of page 22 of our report, Exhibit K-2, is a table showing the amount which the gas company claims it cost to manufacture and distribute gas. Opposite the words "Net cost" is given figures representing the cost to the company after the deduction for residuals. Opposite the words "M. & M. & Co. cost," are figures which we concluded it cost the company by excluding certain charges and substituting others of our own. These figures are taken from the books of the company as will be seen by reference to page 13 of the said report.

On page 23 of our reports is shown the items that make up the difference between the claim of the gas company and our report. For instance we have $7,291.53 as depreciation. That was arrived at by subtracting the amount that we allowed for depreciation from the $10,000.00 charged by the gas company. The other charges contained in that schedule are determined in the same manner. We

excluded interest on bonds and floating indebtedness because it is not a charge entering into the cost of manufacturing gas.

872 Under sundry credits is included items appearing in the profit and loss account of the company, and are a proper reduction from the cost."

Addition. Add to the second paragraph on page 509 of appellant's abstract the testimony of James Hall, the following:

"On page 27 of my report I have eliminated the Annex land and buildings valued at $16,500.00, for the reason that it is not used for the purpose of manufacturing and distributing gas in Cedar Rapids. I also eliminated second hand material, valued at $1,600.00 for the reason that it is not a part of the working assets of the company, and good business judgment would demand its sale for scrap. I also eliminated the item of $5,483.00 for mains. The item is for high pressure mains to Marion. It is charged on the books of the company to the Marion plant.

Correction. Strike from the middle of the second paragraph on page 510 of the appellant's abstract, of the testimony of James Hall, the following:

"I did not ascertain the cost of manufacturing and distributing gas, but arrived at it from the average cost of five years, 64.04," and substitute in lieu thereof the following: "For 1907, the amounts of September, October, November and December are estimates. They are based on the increase for those months over the increase of the corresponding months for the year 1906. The other eight months I got from the record. In computing on the basis of 90c. per M c. f., the gas company would receive $95,165.99 for gas sold. Computing the cost on the average cost for five years the gas would cost the company $69,715.89, said average cost being 60.04c. per M c. f."

873 Add to the bottom of the first paragraph on page 511 of the appellant's abstract, the following from the testimony of James Hall: "In Exhibit B attached to our report, I have the words, "The Franchise Rights, $150,000." That is the corresponding entry of capital stock under the heading liabilities.

Exhibit A attached to my report is the detailed cost of manufacturing and distributing gas for each of the five years under review, December 31, 1902, to 1906, inclusive. The blank space left for the years 1902 and 1904, inclusive, were not filled in because I could not get a detailed analysis of the account. The accounts were allowed to stand as they were shown on the books. Where they were not analyzed they are shown in a lump sum under the head "Manufacturing cost." Wherever I could analyze the account I have shown it in detail. Where I could not make the analysis it is shown in the totals. The figures in red ink in the report indicate a credit. For instance, profit on fittings account for 1902, was $283.99.

Under the column 1906 of the comparative balance sheet, Exhibit B, I have bills payable $31,000.00. This includes all of the cost of building and constructing the plant at Marion. If the cost of constructing the Marion plant as shown by the books had been

deducted and had not been paid for by the Cedar Rapids Gas Co., its bills payable on December 31, 1906, would be $5,000.00.

The five pages in my report marked "Schedule 1" are compiled from the answers to the interrogatories filed herein which is marked Exhibit 50.

Schedule 2 of my report was compiled from plaintiff's Exhibit 26.

874 I had several conversations with A. T. Averill and Glenn M. Averill while I was here making the examination of these books. Nothing was ever said in any of these conversations with reference to making corrections on Exhibit 26 because of a fast meter. Glenn M. Averill denied having this book, Exhibit 26. That was the only conversation we had about it. I asked for all the books. I knew there was a monthly record book and he denied that there was.

Schedule 3 attached to my report is a summary of the daily record book for the year ending December 31, 1906.

Schedule 4 is a comparative statement of the materials of manufacture and the percentage of decrease or increase over the corresponding months of the previous year. For instance, the month of April, 1905, the figures .68 is in red ink. That represents smaller sales for April, 1905, than for the corresponding month of the previous year.

Schedule 5 of my report, Exhibit K-2, is a comparative statement from the books of the company, showing charges for gas coal used from January 1, 1905, to July 31, 1907.

Schedule 6 is a comparative statement from the books of the company of the average sales per meter in cubic feet for the years 1905 and 1906, and as far as they are recorded in 1907. The practice of the company is to charge the retort house the purchase price of the coal, and a sum for shrinkage and handling. We determine whether they charge too much for shrinkage by adding the quantities handled and the quantities purchased from their records and bills, and what was sent to the retort house can be ascertained from

875 the daily record books. This computation will show whether they charged too much for shrinkage or not."

Correction. Strike from the appellant's abstract the second paragraph from the bottom page 515, of testimony of James Hall, and substitute in lieu thereof, the following:

"The books do not set forth clearly the various transactions of the company. They are not kept on the proper basis of revenue and expenditures. They are kept simply on the basis of cash receipts and cash disbursements. They should be kept on the basis of the business done. In the general books of the company they do not keep any particulars of the gas company's account in order to check the errors of the bookkeeper, and without that it is a simple matter for the bookkeeper to appropriate money. Then the consumers' accounts being practically destroyed, all the leaves belonging to the consumers' ledger. That would only be done in a very loosely managed system. The pages should be kept for a period of at least a year or two years. The vouchers are not kept in such a way that

they can be readily identified or traced. In numerous cases there are no invoices and the payments are made by drafts and not in such a way as could be identified by the books except simply the item in the book of cash. You can not determine whether it is right or not. There don't seem to be any proper way of determining the meters or the services that were of any use to us."

Correction. Strike from the second paragraph on page 516 of appellant's abstract, of the testimony of James Hall, the following:

876 "I have charged nothing on account of depreciation because part of the gas goes to Marion, and nothing as interest on the capital of the Marion plant," and substitute in lieu thereof the following:

"I have charged nothing as depreciation on the plant, because part of the gas manufactured there goes to Marion. I have charged nothing as interest on the capital invested in the Marion plant. That is not fair to the consumers of Cedar Rapids. The Marion plant should stand its proportion of the depreciation on the works. The interest on the floating indebtedness, which was created largely for the building of the plant at Marion, is not a fair or proper charge against the Cedar Rapids plant. The company charged their interest account with interest on the floating indebtedness, contracted for building the plant at Marion, during the course of the construction of that plant."

Correction. Strike from the top of page 517 of appellant's abstract the testimony of James Hall, the following:

"It is not proper to enter the leakage $3,146.86 in dollars and cents, because so including it you include it twice. You have already included it under manufacturing expense, and by so doing you increase the amount available for dividends by that amount, $3,165.83," and substitute in lieu thereof the following: "It is not proper to enter leakage as is shown in Exhibit 14 at $3,146.86 in determining the cost of distribution, because by so doing you include it twice. You have already included it under manufacturing expense, and by so doing you decrease the amount available for dividends by $3,165.83."

877 Also strike from the top of said page 517 of the said abstract, the following:

"It was not proper in Exhibit No. 15 to enter gas at the works at $1.15, but it should have been entered at the cost at the holder." and substitute in lieu thereof the following: "It was not proper to enter in Exhibit No. 15 gas used at the works $1,115.39, because it is entered at $1.15 per M. c. f. It should have been entered at the cost at the holder. He has no right to add a profit to the expense in the cost of any article."

Also strike from the first paragraph on page 517 the following: "The company has not included the receipts for gas sold at Marion in 1906 in Exhibit 15, during 1906 at 1,475,000 c. f., gas sold at Marion, and at $1.15 it would amount to $1,840.00," and substitute in lieu thereof the following:

"In Exhibit No. 15 the company has not included the 1,475,000

c. f. of gas sold at Marion during the year 1906, at a cost of $1.15. Approximately $1,840.00 should have been added to said Exhibit to make it correct so far as the receipts are concerned."

Addition. Add to the bottom of the first paragraph on page 559 of the cross examination of James Hall, the following:

"When I was testifying about the division of the time with regard to the superintendent of the works and the $200.00 the president should have, that testimony was outside of my report and my report was not based on that testimony."

Correction. Strike at the bottom of page 563, cross-examination of James Hall, the following: "I assume that I had all the
878 bills for coal bought in 1905," and substitute in lieu thereof the following:

Q. How did you arrive at the number of pounds of coal due contractors less stock that there was on hand, when you didn't know?

A. Assuming your books to be correct at the opening of the period, that is an estimate.

Correction. Strike from the last sentence of the cross-examination of James Hall at the top of page 565 of the appellant's abstract, "From my computation I make the total cost per M. c. f. for 1906, $68.12," and insert in lieu thereof the following:

Q. So you make the total cost per M. c. f. by your computation for 1906 to be 68.12c.?

A. Yes, sir.

Strike from the re-direct examination of James Hall, found on page 563, the following: "If $68.12 includes the depreciation on the whole system," and insert in lieu thereof the following: "If 68.12c. includes depreciation on the plant on the whole system."

Addition. Add to the fourth paragraph on page 565 of the re-direct examination of James Hall, the following: "I first attempted to ascertain the amount of gas metered from the consumers' ledger, because I could not find any other reliable record. I had asked Glenn M. Averill for the record and he told me that he had only the daily record. About three weeks afterward, the monthly record marked Exhibit 26 was given me. I was obliged to call the attention of the gas company in a written notice, to the fact that they could not possibly have made answers to the interrogatories in Ex-
879 hibit 50 without some other record than the one they had given me. It was then that they produced Exhibit 26. It would have no effect on the final results to separate and analyze the cost of coal and water gas. I treated them together.

My attention has been called to Exhibit M-2. If the first item in that Exhibit is correct, then the final result shown therein is correct. That estimate is approximately correct."

Add to the bottom of the first paragraph on page 567 of the re-direct examination of James Hall, the following:

Recross-examination:

"I have said that my report is correct. I mean to state that my deductions from the books are correct, and assuming the depreciation

to be correct, the results are correct. My report is more than mathematically correct; it is correct in principle."

Correction to Testimony of J. C. Gillespie.

Correction. Correct the re-direct examination of J. C. Gillespie by adding the following to the bottom of the first paragraph on page 568: All the items in the books I included in these sheets, which are exact copies of the books and I turned these sheets over to Mr. Hall. I noted all the big items of expense and referred them from time to time to Mr. Hall. I did not leave any of them out of these loose sheets. They are exact copies of the books. These sheets are the ones I brought into court yesterday, and submitted to plaintiff's counsel for cross-examination. I have prepared two indexes
880 for plaintiff's counsel to these sheets, so that they could trace every item by their accounts and our accounts. I have submitted the basis upon which this report was made and the items as they were taken from the books to plaintiff's counsel and to plaintiff for examination.

Corrections and Additions to Testimony of Thomas Suchomal.

Correct the testimony of Thomas Suchomal, top of page 569 of appellant's abstract, by adding the following: "The benches of 6's were installed in 1898. The purifying boxes that we took out in 1905 have been recently sold. We hauled them down to Mr. Carmody's. We have refilled three benches of 9's in the last two years; one last fall and two this year. We refilled three of the benches of 6's in the fall and winter of 1905.

Strike from the first paragraph of the cross-examination of Thomas Suchomal, the following:

"The plaintiff has occupied and used the land out to the rip-rapping, and I never heard anybody claim that the land belonged to anyone else during that time," and substitute in lieu thereof the following:

"During all the time that I have been about the works and superintendent there, the gas company has occupied and used the land out to the rip-rapping.

Q. Did you ever hear anybody claim that that land belonged to anybody else during that time?

A. Yes, sir.

Q. When was there anything of that kind done; since this suit was commenced?

881 A. Somebody did when we put the purifier out there. Claimed that that was out too far."

Addition to Testimony of L. M. Healey.

Addition. Add to the bottom of the direct examination of L. M. Healey at the top of page 576 of the abstract, as follows:

"My opinion was that we had used less gas during the month

of October when the big bill was presented. We had been away and the house was closed during the month."

Corrections and Additions to Testimony of Alton D. Adams.

Addition. Add to the bottom of the first paragraph on page 590, cross-examination of Alton D. Adams, the following:

"Old brick taken from a building that had been erected would not be so good to go on outside of another building that was being erected on the premises. Their greatest value is their use in the construction of a new building on the same property where they are quite valuable.

Correction. Correct the cross-examination of Alton D. Adams, striking from the middle of page 591 of appellant's abstract, the following:

"I do not know sufficiently well how a recuperative bench is constructed—sufficiently well to describe it without drawings," and substitute in lieu thereof the following:

882 "Q. Give a rough kind of a sketch of it, if you will, or a description of it.

A. The recuperative bench is adapted to heating air by means of escaping gas. The air is heated as it enters the bench, and saves a part of the heat through escaping gas, and drives off all the gas from the material as it is being burned in the retorts.

Q. Now tell us how it is constructed.

A. I would not undertake to do that without drawings."

Addition. Add to the cross-examination of Alton D. Adams at the bottom of the first paragraph on page 592 of appellant's abstract the following: "I know of some benches that have been used right along continually. I am not sure but I think they have been used as long as forty years.

Correction. Correct the cross-examination of Alton D. Adams in the middle of page 594, by striking the first question and answer found thereon, and substitute in lieu thereof the following:

"Q. What kind of engines did you figure on?

A. Such engines as are commonly used in gas plants, small slow-speed engines, of moderate speed up to 200 revolutions, from that down.

Q. What size?

A. Ten horse power—it would make any material difference as to the size unless it was a toy engine. It is not infrequent to use an engine running one or two hundred revolutions.

883 Q. Is it high or low speed?

A. These things are relative terms. I could give you the revolutions as I remember it. The terms high and low speed are used without any significance. There is no fixed line."

Correction. Strike from the cross examination of Alton D. Adams, near the top of page 595 of appellant's abstract, the following:

"Q. Can't you answer these questions without your paper?

A. Well, I prefer to not do so; and substitute in lieu thereof the following:

Q. Now, Mr. Adams, what life did you estimate on the purifiers?
A. Fifty years.
Q. Can't you answer these questions without your paper?
A. I prefer not to do so.

Addition. Add to answer to the question, "What size pipe can you afford to dig up and relay," page 596, cross-examination of Alton D. Adams, the following: "All sizes under some circumstances. It is usually poor practice to dig up two and three inch cast iron mains. If you take up these mains for the purpose of laying larger, so that you have to dig down and take them out, you can well afford to take up these mains, after you have dug down to them to put in something else. I did not figure that you would abandon any of the mains four inches and over, of the cast iron, and it would depend on circumstances whether you would abandon any two or
884 three inch cast iron pipes. In addition to this it also depends upon circumstances, as to the hardness of the digging and the depth of the pipe, and the length of time they have been in the ground. I did not make any computation in regard to paving nor take it into consideration, any more than that you would have to take up paving to lay new pipes. At the same time you could take up the old."

Correction. Strike from the bottom of page 597 of the appellant's abstract, of the cross-examination of Alton D. Adams, the following:

"A. I would not give you any cost of doing engineering work. I do not claim to know what it cost to build a building of old pipe for you," and substitute in lieu thereof the following:

"I would not give you any cost of doing engineering work. I can estimate it, but I decline to give you the estimate now.

Q. Will you figure it out and tell us tomorrow morning?

A. Yes, sir, if the court requires it, but I do not see why I am required to give you an estimate on building a gas plant."

Correction. Strike from the bottom of the first paragraph on page 598 of the appellant's abstract of the cross-examination of Alton D. Adams: "In soil like you have here, it all gives out at the same time," and substitute in lieu thereof the following: "I have estimated that the mains taken as a whole, would last 100 years. This would not be true in all towns, but they would last about that. Of
885 course, you are not going to check up the whole system of mains at once, those things do not go to pieces all at once, like the one-horse chaise, the average would be about 100 years."

Then follows the last two sentences of the first paragraph on page 598 of appellant's abstract.

Corrections and Additions to Testimony of Edward W. Bemis.

Correction. Strike from the bottom of the objection contained in the middle of page 602 of appellant's abstract, testimony of Edward W. Bemis, the following: "Objection overruled," and substitute in lieu thereof, "Testimony taken subject to the objection."

Correction. Strike from the appellant's abstract, pages 600,

601 and the first paragraph on page 602 of the direct examination of Edward W. Bemis and insert in lieu thereof the following:

"I reside at Cleveland, Ohio, where I am superintendent of the waterworks; have been superintendent since September, 1901. After leaving John- Hopkins University in 1885 I was engaged in college work and in economic investigations for over ten years, until 1899. During that time I made studies of municipal gas works in the United States, and have visited many plants. I was employed by the State of Illinois to prepare a report on the franchises of Chicago, especially of the gas, electric light, and railways, which report was printed in the state reports. I was at the trial of the Des Moines gas companies at two different periods, and at Indianapolis. I was employed by the city in connection with an attempt to secure lower prices for gas. I was also employed for the same purpose in New York City. Went to New York and lived there two
886 years and devoted myself to a special study in municipal work, particularly in the line of municipal corporations. During that time I was employed by the cities of Haverhill and Springfield, Mass. I also appeared before the Massachusetts Gas Commission, with reference to the price of gas.

I was before the United States Department of Labor several months in 1900. I was sent to investigate the subject in Great Britain. While there I had occasion to get in touch with a dozen of the larger gas companies. In 1901, I came to Cleveland and have been there ever since. I have been employed in connection with several gas cases since then. I was employed by the city of Boston in a case lasting several months in the winter of 1904 and 1905. I was also employed by the city of New York off and on for the last two years, during which time I have given the equivalent of six full months' time to the city of New York, in an investigation of the Consolidated Gas Company. Was there only three or four weeks ago in connection with that case. Have been employed within the last two years by the cities of Baltimore, Syracuse, Buffalo, Montreal, Chicago and Saginaw. During the past three years I have devoted some time to my work as a member of the Committee of Municipal Ownership for the Union Federation. Was one of the committee of five that directed the investigation here and in Great Britain and one of the committee of four that prepared the final report. That took us to many of the leading gas companies, public and private, in Great Britain and a few in this country, as well as to electric light, street railway and water companies. It has been a very extensive investigation, in which we employed many experts, in the different departments of accounting and
887 character of service, both abroad and at home. I have heard the testimony and consulted with different gas engineers with regard to the depreciation of gas works.

I was Professor of History and Political Economy at the Vanderbilt University and resigned in 1902, when I became Professor of Economics at Chicago University. I was two years engaged in general statistical work and for two years was connected with the State College of Kansas.

In 1890 I published a monograph of 150 pages on municipal gas works in the United States, and in 1899 I edited a book entitled, "Municipal Monopolies," which took up the subject of regulation of and municipal ownership in the United States.

I have made a special study of the question of manufacturing and distributing gas in connection with the cases I have been in, and also in connection with a very new report to the Massachusetts Gas Commission that I have been allowed to consult in their office and also the frequent reports and cases in which I have been engaged. My study of the question of depreciation has given me a knowledge of what depreciation is in gas works."

Correction. Correct the testimony of Edward W. Bemis, at the bottom of page 604 of appellant's abstract, by striking out the figures 20 per cent., and inserting in lieu thereof the figures 28 per cent.

Strike from the middle of page 605 of appellant's abstract, the testimony of Edward W. Bemis, the following:

"This company as compared with those and other com-
888 panies with whose cases I have been connected, is very large, and with such a proportion of small pipe it is natural to expect a tendency to high pressure in order to get the gas through the pipes at all, and the consequence of such a method as that would be to have a large leakage," and substitute in lieu thereof the following:

"This company as compared with other companies in whose cases I have been connected, the proportion of small pipe is very large here; with such a large proportion of two and three inch pipe it is natural to expect a tendency to have high pressure in order to get the gas through the pipes at all, which would mean a very large pressure to force the gas in certain sections and the consequence of such a method would be to have large leakage."

Addition. Add to the bottom of the first paragraph on page 608 of the direct examination of Edward W. Bemis, the following:

"Q. You say that you found there was, assuming Col. Pratt's inventory to be correct, $237,677.00 upon which you computed depreciation?

A. That is correct.

Q. Now, go on and give your figures. State how you arrived at that and the reasons for your conclusions."

Correction. Strike from the second paragraph on page 610 of appellant's abstract of the testimony of Edward W. Bemis, the following: "Exhibit Q-2 is to show how much would have to be set aside per M c. f. if the life were taken at a much less length, that is 50 years for mains, 75 years for the residue of the property," and in-
sert in lieu thereof the following: "Exhibit Q-2 is intended to
889 illustrate how much should be set aside per M c. f. if the life were taken at a much less length than is shown in Exhibit P-2, that is 50 years for mains, instead of 75 years and 15 years for the residue of the property aside from buildings, holders, and yard connections, instead of 20 years. That carried out in the same way to show the necessity of setting aside $5,589.90 on the

sales of 1906 or 6.12c., and on the sales of 1907 of 5.32c. The depreciation is reckoned on the part used in 1907 including the water gas set. The 5.37 should be compared with the depreciation found by Mr. Hall, showing a substantial agreement.

Under the column of Exhibit Q-2 headed "Col. Pratt's Appraisal," I have substracted from his appraisal $335,467.91, the paving $4,000.00, on Marion street mains, $6,500.00 on Annex, and the expense of setting meters paid by consumers, etc.

The second hand material shown in schedule No. 26 on page 22 of Exhibit 50 should be sold, but I have made no deduction for that.

I think it is entirely proper for a company to adopt rules such as turning off gas for a failure to pay bills, and also to require a deposit or guarantee as an inducement to prompt payment, and I think an allowance of 8-10 of one cent per M c. f. of gas sold should cover such items. I found no trouble in Cleveland where this plan is in operation, both in the water and gas companies, and I have found no trouble elsewhere. This plan is in operation in New York City. There has never been in that city a deduction for prompt payment, but instead a deposit from the consumer. The deposit amounts there to $1,000,000.00 on $13,000,000.00 annual
890 sales. They have found themselves secured in this way against bad debts, by this deposit, or if not completely securing the loss the losses are less than one per cent per M c. f.

In New York the deposit by the consumer with the company to secure the company against loss is 6c. or 7c. per M c. f., as compared with 6c. in Cleveland. This fund is kept on deposit and the consumers get interest on it just as the bond holder does on his bond. I think if this rule of requiring a deposit was introduced in a place like Cedar Rapids, that had not been accustomed to it, and was accompanied by a reduction of the rates at the same time, the friction would be reduced. Floating population increases the bad debts."

Correction. Strike from the top of page 617 of the cross-examination of Edward W. Bemis, the following:

"If the company had been giving a 10c. discount, and then cut off that practice and are not allowed to require an advance deposit then it might be that 8c. would not cover their losses, but there would not need to be a large increase and if plaintiff could not require a deposit it would add enough to make that item 7c. instead of 8c.," and add in lieu thereof the following: "Assuming that the company are not allowed to require a deposit to cover bad debts, and should discontinue the 10c. per M c. f. discount for prompt payment, I think the loss might be a little more than eight-tenths of a cent but not a large increase. I think if a deposit could not be required there might be enough added to the eight-tenths to make the loss 1c. per M c. f."

Correction. Strike from the top of page 618 of the cross-examination of Edward W. Bemis, the following:

891 "I haven't an opportunity to know the business of any other company besides this one," and substitute in lieu thereof the following:

low yield may be accounted for by leaky benches or leaky retorts, but that seems impossible in view of the fact that they were renewed."

895 Add to the bottom of the second paragraph on page 626 of the appellant's abstract, of the cross-examination of Edward W. Bemis, the following:

"I think ¾ of the gas mains in paved streets in Cedar Rapids, are on streets that are paralleled by alleys. To duplicate the mains here in such streets, they could be laid either in the alleys or in the parking.

Q. Assuming that in order to get at the present value in order to relay the mains it would be necessary to relay them in their present location, then to get at the present value of the mains it would be necessary to take this matter of digging up the paving and relaying of the mains into consideration, wouldn't it?

A. Apparently. That means if the whole thing is so it is so. I agree to that. If you have to do it you have to do it, of course. If you have to replace the mains in their present location now after the pavements have been laid at the city's expense, of course, then there is the cost of getting through that paving, and that would add to the reproduction value."

Correction. Strike the following answer, commencing at the bottom of page 629 of appellant's abstract, cross-examination of Edward W. Bemis, "Some of it would be scrap when taken out. I did not make any estimate as to how much will be scrap when taken out, but say pipe will last 75 years," and substitute in lieu thereof the following: "Some of it will be scrap when taken out.

Q. How much did you estimate would be scrap when it was taken out?

896 A. I did not make any estimate on that point, but I say that pipe will last, above scrap, 75 years."

Addition. Add to the bottom of the seventh paragraph on page 630 of appellant's abstract, cross-examination of Edward W. Bemis, the following:

"While I allowed one-half cent per M c. f. for depreciation for gas sold to Marion, I stated in my testimony that that was too much. It was intended to cover the manufacturing plant."

Correction. Strike from the middle of page 631 of appellant's abstract, cross-examination of Edward W. Bemis, the following: "Q. You think the company should earn at least 20 per cent profit? A. No, sir." And substitute in lieu thereof the following:

Q. You think the company should have at least 20 per cent profit on the gas manufactured?

A. No, sir. I think that where a company is getting $1.25 for its gas——

Q. Hold on, you have answered the question."

Correction. Strike from the bottom of page 631 and the top of page 632 of appellant's abstract, cross-examination of Edward W. Bemis, the following:

"I wish to add to the valuation upon which I figured depreciation the sum of $6,500.00, on account of the buildings on the Annex,

which were not included in Mr. Pratt's Exhibit No. 19, though I supposed it was. I also made a mistake on the amount that should be taken from the value of the high pressure mains going to Marion," and substitute in lieu thereof the following:

897 "I still think that 5c per M c. f. is a proper depreciation in Cedar Rapids. I did make a mistake in this computation I discover. It is very slight, and I will correct it now, or on re-direct examination, if you prefer. The allowance of the appraisal of the property I had down the $5,500.00 approximately for the high pressure main to include the high pressure main all the way to Marion. I learned at the noon hour that it included only a part of the way, therefore I should not have included as much as $4,000.00. There is a second change I discovered in the examination during the noon hour in Exhibit 19. That apparently the buildings on the Annex, $6,500.00 had not been included by Col. Pratt in his $35,000.00, so I wish to add $6,500.00 for the buildings, holders, and yard connections. That makes a difference of 115.70 and the two added together makes a total, on the basis of 50 years of life of $124.50 and on the basis of the table in Exhibit Q-2 of $142.10 a year, a difference of about one-seventh of a cent per M c. f. of gas."

Strike from the middle of page 632 of appellant's abstract, of the cross-examination of Edward W. Bemis, the following:

"I testified in the Des Moines case in 1905," and substitute in lieu thereof the following:

"Q. You testified in a case that was on trial in Des Moines, didn't you?

A. Yes, sir; 15 years ago, I think. I think it is fully ten years ago that I was in Des Moines. I was there twice. I think once was 15 or 17 years ago, and the other some time later, but both over ten years ago."

898 Correction. Strike from page 632 of appellant's abstract, the following:

"Q. You have not operated a gas plant since that time?

A. No, sir. I have not been employed by any gas company in the operation of their gas plants." And substitute in lieu thereof the following:

Q. You have not been operating a gas plant since that time, have you?

A. No, sir.

Q. You have not been around gas plants to see how they depreciate?

A. I have visited a great many gas plants since then.

Also strike from the middle of page 632 of appellant's abstract, cross-examination of Edward W. Bemis, the following:

"In the figure of 7.04 used in my schedule for repairs, I have included I believe 7c for promotion and 6c for repairs and making a total of 12.7 that Mr. Hall figured in all," and substitute in lieu thereof the following:

"Q. Now, Mr. Bemis, in estimating the depreciation, you also included something for promotion?

A. No, sir, not in the promotion, but in the 7.04c for repairs. I believe that one cent should be allowed for promotion and 6c for repairs. That makes the 7.04c or thereabouts, making 12.71c, as Mr. Hall, figures, in all."

Correct the cross-examination of Edward W. Bemis, top of page 633 relative to a sinking fund theory, as applied to depreciation, by striking out the following:

899 "I know of no company that is carrying such a reserve fund," and substitute in lieu thereof the following:

"I know of no company that is carrying that reserve fund in the savings bank, or out at interest, except the Minneapolis plant. I know some private companies that use the sinking fund principle just the same and put the money back into the business. I think that is the better way to do it.

Correction of Testimony of Allen McDuff.

Correction. Correct the cross-examination of Allen McDuff, bottom of page 641 of appellant's abstract, by the addition of the following:

"The boiler and engines I spoke of are run night and day. They are in continuous use night, day and Sundays, not an off day of the year almost."

Further Corrections and Additions to Testimony of Edward W. Bemis.

Correction. Strike from the bottom of page 634 of appellant's abstract, cross-examination of Edward W. Bemis, the following:

"And that is what I did when I said the leakage per mile of mains is $250,000 here and $150,000 in these 19 Massachusetts companies," and substitute in lieu thereof the following:

"It is the extension of mains over a wide territory, the number of miles of mains that gas goes through that determines leakage. It is not a question of whether the gas is flowing slowly or swiftly

900 in the mains. The gas pressing against the pipes of course, and escaping if there are any openings and so a fair way is to take the leakage per mile of main and that is what I did when I said the leakage per mile of main is 250,000 feet, approximately here and 150,000 feet approximately in these 13 Massachusetts companies. Since morning I have added eight other companies so as to have every company in Massachusetts over 40,000,000 c. f. of sales and under 300,000,000. I except North Adams because that company sells a portion of its gas to other companies. The average rate of the 17 companies is 6.56 per cent last year. I took 7 as a normal amount here. I think it was high. Taking 7 per cent here and assuming that the entire 4½ per cent that the station meter was running fast had applied all through the period of the last two years, makes 13.11 per cent. I never heard before, as is claimed here, that gas leaks are through the population and not through the mains."

Strike from appellant's abstract the question contained on page

635 of said abstract, and substitute in lieu thereof the following question:

"Q. I will call your attention to the following sentence on page 53 of the report—the twenty-second Annual Report of the Massachusetts Gas Commissioners, "Prior to the beginning of each fiscal year the manager of the plant shall furnish to the mayor and selectmen of municipal light board, if any, an estimate of the income from the sales of gas and electricity during the ensuing fiscal year and of the expenses of the plant during said year, meaning the gross expense of operation, maintenance and repairs, interest on bonds, notes or scrip issued to pay for the plant, an amount for
901 depreciation equal to 3 per cent of the cost of the plant exclusive of land and water used in the operating burden thereof, or such smaller or larger amount as the Board of Gas and Electric Light Commissioners may approve the requirement of the sinking fund, the debt incurred to the plant and the loss if any, in the operation of the plant in the course of each year. What have you to say, if anything, in regard to the manner in which these Commissioners of Massachusetts have allowed or specified for depreciation on gas property?" (Then follows answer on page 635 abstract.) Also add:

Plaintiff now offers in evidence Exhibit No. 53 being the Massachusetts Laws of 1906, with reference to depreciation of gas plants. The part of Exhibit No. 53 offered in evidence contains the provision set out in the question last above propounded to the witness Bemis.

Strike from the middle of page 637 of appellant's abstract, the following offer:

"Defendant offers B-2," and substitute in lieu thereof, "Defendants now offer in evidence the schedule or compilation just testified from by the witness Bemis, and which is marked by the reporter Exhibit R-2."

Addition. Add to the re-direct examination of Edward W. Bemis, middle of page 637 of appellant's abstract, the following:

"In making my computation, after adding $1.50 to the prices of water pipe, I have the following figures as to cost of cast iron pipe along the trenches in Cedar Rapids:

1896	$22.50 per ton
1897	18.16 per ton
1898	18.75 per ton

902

1899	19.40 per ton
1900	29.50 per ton
1901	24.00 per ton
1902	27.00 per ton
1903	20.83 per ton
1904	26.00 per ton
1905	29.63 per ton

The amount laid in 1906 was only 2,700 feet. It was a very small amount; it was 4 inch pipe and I did not figure it.

Correction. After the words "Defendant offers B-2," in the middle of page 637 of appellant's abstract, testimony of Edward W. Bemis, insert the following:

"Recross-examination."

Addition to Testimony of Thomas Suchomal.

Addition. Add to the testimony of Thomas Suchomal, near the bottom of page 643 of appellant's abstract, regarding the pressure charts, the following:

"I have 4 here: Exhibit S-2 for December 2, 1907.
Exhibit T-2 for December 4, 1907.
Exhibit U-2, for December 6, 1907.
Exhibit V-2, for December 8, 1907.
Exhibit W-2 is also one of the charts recording the pressure.

Further Corrections and Additions to Testimony of Alton D. Adams.

Correction. Strike from the center of page 646 of appellant's abstract, the following:

903 "Exhibit X-2. This Exhibit attempts to show the fluctuations in pipe for the year stated by the witness and it is not necessary to set it out herein," and substitute in lieu thereof, the following: "Exhibit X-2 gives substantially the fluctuations in the price of cast iron pipe in the vicinity of Chicago, including the State of Iowa.

1883	$33.00
1884	27.50 to $32.00
1885	25.00 to 27.00
1886	25.50 to 30.00
1887	28.50 to 31.00
1888	24.50 to 28.50
1889	24.25 to 29.00
1890	28.00 to 31.00
1891	22.00 to 28.00
1892	24.00 to 22.50
1893	20.50 to 24.00
1894	18.00 to 20.00
1895	18.00 to 24.00
1896	18.00 to 22.00
1897	15.50 to 18.00
1898	15.50 to 18.00
1899	18.00 to 30.50
1900	24.00 to 30.50
1901	20.50 to 26.00
1902	26.00 to 34.00
1903	26.00 to 34.00

The chart only shows for the first half of the year 1904, and gives the price of cast iron pipe at that time at $34.00."

Addition. Near the top of page 647 of appellant's abstract
904 add to the direct-examination of Alton D. Adams as to the Standard Authorities on the pressure with which he was familiar, the following: "I have taken pains to familiarize myself on the subject of pressure. Newbigging is a standard work on this subject. It is called "Newbigging's Hand Book." Hughes is another work on gas and pressure. O'Connor's pocket book for gas engineers, published in London and also in this country, also treats on this subject, and the question of gas stoves and is an authority. Will Crofton of London, England, treats to quite an extent and is an authority. I am quite familiar with the works of these authors. Also with the works of Hunt and Butterfield on coal gas."

Add to the testimony of Alton D. Adams, bottom of the second paragraph, page 653 of appellant's abstract, the following: "The contents of the envelope marked Exhibit A-3 are samples of the white particles taken from the large holder at the gas works, December 14, 1907, by myself. I have one of these samples to which a match has been applied, and find that it has a glossy appearance. I never saw bird droppings that would show that appearance under the action of heat. As to its being bird droppings, a considerable portion of it was under the paint. When I scraped away the paint, I found it there.

Q. So that, if it was bird droppings, the bird must have found some way to get under the paint?

A. Precisely. I heard the testimony with regard to scraping the holder. The outside surface is all encrusted with rust. I did not see anything smooth about it. The lead pencil memorandum on Exhibit A-3, "Samples taken from seams of the largest
905 holder at the gas works in Cedar Rapids, December 31, 1907, by Alton D. Adams," was made by me."

"Exhibit A-3."

Defendants now offer in evidence the above named samples, which are marked Exhibit A-3, which are objected to by plaintiff, as being incompetent, irrevelant, and immaterial, and an attempt to contradict its own witness.

Exhibits S-2, T-2, U-2, V-2, W-2, and Y-2.

Defendants offer in evidence the charts from the pressure gauge at the works, which are identified and marked Exhibits S-2, T-2, U-2, V-2, and Y-2. Also the chart taken from the city hall marked Exhibit W-2. To which plaintiff objects on the ground that there is no evidence to show that the gauge was in proper working order, so far as Exhibit Y-2 is concerned, and objects to Exhibits S-2, T-2, U-2, V-2, and W-2 as irrevelant and immaterial, and incompetent, the question of pressure not being involved,

Correction. Correct the offer made at the bottom of page 655 of appellant's abstract, by striking out the words "Exhibit B-2" wherever the same appears in the said offer, and inserting in lieu thereof the words and figures "B-3," the same being a schedule of tests made by the witness Alton D. Adams.

Add to the direct examination of Alton D. Adams at the bottom of the third paragraph on page 658 of appellant's abstract, the following:

"Exhibit C-3 is a chart dated December 13, 1907, on which I wrote "Chart on recording gauge at the time burner was tested, De-
906 cember 13, 1907, at the city hall by Alton D. Adams." This chart shows that at 12 o'clock the pressure was about 4.4 inches."

"EXHIBIT C-3."

Defendant now offers in evidence chart marked Exhibit C-3 to which plaintiff objects for the reason that the same is incompetent, irrevelant, and immaterial.

Add to testimony of Alton D. Adams, at bottom of page 655, the following: "The higher the pressure, the more the leakage through the house pipes. That leakage is recorded by the meter, so that an excessive high pressure such as they have here might well lead to a very appreciable leakage in the house pipes, especially when they are poor, resulting in a consequent loss to the consumer."

Add to the bottom of the fourth paragraph on page 660 of appellant's abstract, of the cross examination of Alton D. Adams, the following:

"Where you have consumers all the way from the works to the outlying districts, I would not consider the works adequate, if at any time the difference of pressure as registered at the works and as registered in the outlying districts was more than 1-10 to 7-10 of an inch. This difference in pressure depends somewhat upon conditions, and also upon the difference in the elevations between the works and the outlying districts."

Also add at the bottom of the third paragraph on page 661 of appellant's abstract, cross examination of Alton D. Adams, the following:

"I know of a governor burner. This method would be im-
907 practicable in the regulation of the proper flow of gas by the ordinary house holder. I know what is known as Sugg's regulating burner. It would not be practical where you have such dry gas as you have here. It requires special care for general use. I never knew of Sugg's burner being used in this country. There are other governor burners such as the Rafielle."

Also add at the bottom of page 661 of appellant's abstract, cross examination of Alton D. Adams:

"Q. Did you ever in your life see or hear of a report, except what you have said about it yourself, where a test was made and showed a higher efficiency in an ordinary Welsbach burner at 1½ than at 5 inches of pressure?

A. I have seen reports of tests that have shown as high at 1½ as at 3½. Tests were made by the New York Electric Light Testing Laboratory for illuminating engineers, and published in the Gas Lighting Journal for July 30, 1907, at page 307. This test was made with incandescent burners. It showed the test of five different styles of chimneys with ½, 1 and 3 inch pressure. The tests showed the efficiency of the light in each case. I also have another test made by Mr. Van Rensselaer of Lansing, made before the American Institute and published in the Progressive Age, January 1, 1907. It was intended to show 40 incandescent lamps in groups of ten lamps each, and every test was made at 1½ inches. It was intended to show the efficiency of the light and mantle and globe. It was made with a Welsbach burner.

Q. Have you any other basis upon which you made up your statement as to the comparative efficiency of high and low pressure?

A. I have other statements of well known, good authorities
908 about the efficiency of pressure necessary for a suitable operation. They name the pressure that gives the best result. I have made tests for the purpose of showing this efficiency.

Exhibit No. 55 is the chart I procured at the works and has marked on the back, "Obtained at the works December 2, 1907. Alton D. Adams." That is the only chart I got down there. I have no others."

Correction. Correct the cross examination of Alton D. Adams, middle of page 664 of appellant's abstract, by striking out the following:

"Q. Can't a laborer on the street, or in the gas works, make the test and find out in a minute?

A. I do not know; I cannot know without looking at my books," and substitute in lieu thereof the following:

"Q. If it is one of the compounds of sulphur, isn't there a simple way of finding out if it is or not?

A. You may call it simple. I do not think so.

Q. Can't a laborer out on the street or in the gas works make the test and find out in a minute?

A. I do not know. I did not talk with the laborers.

Q. Can't anybody that knows anything about the gas business know it?

A. I can't without looking at my books.

Q. Can't any boy wiping lamps for the gas company tell, without looking it up whether it has any compounds of sulphur in it?

A. No. If I wanted to know the component parts of gas
909 I would take Nubigging or some other authority."

Further correct appellant's abstract on page 664 by inserting after the answer in the middle of the said page the following:

"Redirect examination."

Also strike the following:

"Exhibit D-3 is the paper containing the tests on gas mantles. Two sets of tests that I mentioned on my cross examination. They are not named in the Exhibit. I might add that they are recognized

in the gas industries everywhere," and substitute in lieu thereof the following:

"Exhibit D-3 is the paper containing the two sets, two sets of tests I made on gas mantles that I mentioned in my cross examination. About these journals, I might add that they are recognized in the gas industries everywhere. They stand at the head of the gas journals.

Addition. Add to the redirect examination of Alton D. Adams, at the bottom of page 664 of appellant's abstract, the following:

"Defendants offer in evidence the chart marked Exhibit No. 55."

Correction and Addition to Testimony of James W. Bowman.

Correction. Correct the cross examination of James W. Bowman, at the bottom of page 627 of appellant's abstract, by striking out the following: "We have owned it 50 years and paid $12.50 per acre," and substitute the *the* following:

910 "Q. How long have you people owned the land?

A. Well, 40 or 50 years.

Q. How much did you pay for it.

Objected to as not cross-examination, the estimate of the witness being based on the value of the land last year approximate to the time of the passage of the ordinance.

A. Some of it has been owned that long a time, and part of it for a shorter period. I do not know how much we paid for it. I think a part of it was brought for perhaps $12.50 an acre. Some of it was purchased about 20 years ago. We paid $45 per acre for that. We also purchased some for $65 per acre, about 20 years ago. I think we paid that for about 80 acres."

Addition. Add to the bottom of the first paragraph on page 673 of the cross-examination of J. W. Bowman:

"My brother-in-law is a good farmer. The farm is well taken care of, but I think sometimes he is skinning it a little. He is not farming for his health. I think he is taking off too many crops. He has been on the farm five years."

Add to the offer contained on page 673 of appellant's abstract, Exhibit 52, being a statement of the Clerk of the District Court as to the judgment rendered against the Cedar Rapids Gas Light Company by Charles Crago the following objection:

Objected to by defendants as incompetent, irrelevant and immaterial, not the best evidence, and does not show that it was for any claim for damages growing out of the gas business or is in any way connected with it.

911 Correction. Correct appellant's abstract at middle of page 676 by striking out the name of witness J. R. Warriner and substitute in lieu thereof the name T. R. Warriner.

Further Correction and Addition to Testimony of R. A. Wallace.

Addition. Add to the direct examination of R. A. Wallace, bottom of page 694 of appellant's abstract, "I know the buildings of the Cedar Rapids Gas Light Co. I built some of them."

Correct the testimony of R. A. Wallace, at the bottom of the first paragraph at the top of page 696 of appellant's abstract, by inserting the following:

Q. You may explain how you arrived at the value of the trusses.

Objected to by defendants as not rebutting, plaintiff having gone over the value of the property, can not be permitted now to go over these values again. Testimony on page 696 taken to subject the said objection.

Addition. Add to the cross-examination of R. A. Wallace, near the bottom of page 697 of appellant's abstract, the following:

"I am the same person who gave the estimates and costs of buildings a few days ago. In my estimates I placed the value of iron at over $2,000.00. I am a brother-in-law of Mr. Hughes.

Further Corrections and Additions to Testimony of Thomas Suchomal.

Correction. Correct the testimony of Thomas Suchomal by adding the following at the bottom of page 698 of appellant's abstract:

912 Q. Were you familiar with the amount of the rise of water in the river from year to year.

A. Since 1884 I am pretty familiar with it, yes, sir.

Q. What is the general ordinary rise of the water there in feet since you can tell?

Objected to by the defendants as being incompetent, irrelevant, and immaterial, and not the best evidence, and particularly incompetent and immaterial because no title can be acquired by the filling up of a part of this lot. The meander line being conclusive. All the testimony abstracted in the first paragraph on page 699 of appellant's abstract is taken subject to this objection.

Strike from the direct examination of Thomas Suchomal, page 702 of appellant's abstract, the following:

"We have had from one to three thousand pounds difference in the mining weights of cars of coal and what they weigh here. The mining weights were always heavier. The shrinkage will average from a ton and a half to two tons. There is also some waste of the coal in unloading," and substitute in lieu thereof the following:

Q. Have you seen the amount of weights of the cars when it comes in there?

A. I have; I see it every day.

Q. Have you seen the weights that the coal was when it came into the works?

A. Yes, sir; the weigh-master turns the weights over to me.

Q. What difference has there been in the mining weights of the coal you received and the scale weights at the works.

913 Objected to by defendants as incompetent, irrelevant and immaterial, and not rebutting, and not the best evidence, the witness is incompetent.

Testimony taken subject to objection.

A. There is a great deal of difference. Sometimes more and

sometimes less. We have had from one thousand to four thousand pounds difference. The mining weights were always the heaviest.

Q. How much do you think that the cars would usually run short of the mining weights.

Defendants make the same objection as above.

A. Well, there was from one thousand to five thousand pounds. I should say the average was about a ton and one-half to two tons.

Also strike from the bottom of page 702 of the direct examination of Thomas Suchomal, the following:

"The cost of handling the coal averages about 15c a ton for unloading; 7c for shrinkage—when it is shoveled out of the car on the floor of the coal shed its costs 7c. When it has to be shoveled twice or three times it costs 20c per ton. About one-third of the coal is handled at 7c and the rest at 20c. I hire the men to do the shoveling," and substitute in lieu thereof the following:

Q. Tell us what it cost the company to handle coal there.

Objected to by defendants as incompetent, irrelevant and immaterial, not rebuttal, and not the best evidence; the witness is incompetent.

Testimony taken subject to the objection.

914 A. The average is about 15c per ton for unloading the coal; 7c for shoveling and from 7c to 20c for unloading. About one-third of the coal is handled at 7c and the rest at 20c.

Addition. Add to the bottom of the first paragraph the cross-examination of Thomas Suchomal, page 703 of the appellant's abstract, the following:

"I knew the scales at the works were out of commission. When there would be a difference between the weights at the mine and the weight on these scales I reported it. When there was a difference of 1,000 pounds I did not report it.

Q. Was there ever an effort made to ascertain whether the scale at the works were wrong or not?

A. No, sir. I did not know whether the scales at the works were ever found out wrong or whether the scales of the railroad company were wrong. When I was using the scales that belong to the railway company, and weighed out a car load of coal and found that there was a discrepancy of five thousand pounds between those and the mine weights, I did not make any effort to find out which was wrong. I never spoke about it. I did not know anything about the shortage in the coal account. We have not used these scales for about two years. We have no method to ascertain the difference between the mine weights and the weights here. We accept the mining weights. I discovered that the meter was wrong before this law suit was commenced."

Add to the bottom of the second paragraph, page 704 of the cross-examination of Thomas Suchomal, the following:

915 "I was there when Professor Bemis and Mr. Adams said there were white spots on the holder. They may have been examining the holder. I can't say but what this naphthalene here came from the very place they saw it.

Q. Had you ever seen them before Professor Bemis and Mr. Adams were there?

A. I never paid any attention to white specks on there.

Q. Had you ever seen any white spots around the seams?

A. Yes, sir; after my attention was called to them by Mr. Bemis.

Q. So that when you sprung that wonderful bird story of the bird droppings on us here yesterday, you knew they were naphthalene spots on the holder, did you?

A. Yes, sir.

Further Corrections and Additions to Testimony of George McLean.

Correction. Correct the testimony of George McLean at page 705 of appellant's abstract, by substituting the following after the words "direct examination:"

Q. What is the custom among gas people and others who buy coal at the mines, as to buying on mine weights or not?

Objected to by defendants as being incompetent, irrelevant, and immaterial, and not rebuttal. The testimony of the said witness contained on pages 705 to 711 bottom, is received subject to the same objection.

916 Correction. Strike the following question from the middle of page 711 of appellant's abstract:

Q. Assume that the benches of 9s were bought in the summer and installed in the fall of 1904 in this gas plant and that about August, 1906, they were worn out and new ones had to be purchased in place of them and one was installed about that time and the others the following year and suppose the method of charging for repairs was when they were made, then in that case would or would not it be proper to charge the year 1906 with this replacement of these benches? and substitute in lieu thereof the following:

Q. Now, assume, Mr. McLean that the benches of 9s were bought in the summer and installed in the fall of 1904 in this gas plant, and that about August, 1906, they were worn out and new ones had to be purchased, in the place of them, and one was installed about that time and the others installed in the following year. What would you say about the cost of renewing these benches being or not being charged properly to the cost of gas for the year 1905 and 1906, or for 1906. I will add a little more to my question. Suppose in the instance mentioned, in the preceding question, the method of charging off depreciation was—or I mean, charging for repairs, was when they were made and not to keep an account such as you mentioned then in that case, would or would it not be proper to charge the year 1906 with the replacement of these benches?

Objected to by defendants as incompetent, irrelevan- and immaterial, and not rebuttal. It shows on its face that it ought not to be charged until six months after this ordinance was passed, as shown by plaintiff's testimony.

917 Also strike from the answer at page 711 of appellant's abstract the following:

"If the benches were worn out in August, 1905, and 1906, it

would be proper to charge the replacement of them to the gas that was made in wearing them out under the system of bookkeeping you have stated," and substitute in lieu thereof the following:

Q. If the benches were worn out in the month of August for the years 1905 and 1906, would it not be proper to charge the replacement of these benches to the gas that was made in wearing them out?

Objected to by defendants as being leading and suggestive, and not rebuttal, and not expert testimony.

A. Yes, sir. Under the system of bookkeeping you have stated.

Correction. Strike from the cross-examination of George McLean at the top of page 712 of appellant's abstract, the following:

"Q. Didn't you say to Mr. Lazelle in substance, that you could make more if you would testify in behalf of the people, but you would not do it?

A. My statement was, that I could make more money traveling about the country telling half the truth and manipulating figures to misrepresent them, in one year than I could by faithfully working for the gas company 25 years, and the statement was made of Mr. Bemis and all of his kind," and substitute in lieu thereof the following:

Q. Do you know Mr. Holmes of the Gazette, and Mr. Lazelle of the Republican?

A. I think I have met both of these gentlemen.

918 Q. Did you say to Mr. Fred Lazelle—didn't you have a conversation with him to this effect—that you could make a good deal more if you would testify in behalf of the people or the city, but that you would not testify in behalf of the city or the people for a million dollars?

A. That is a part of the statement, but not all. I will give you the statement. I did say that I could make more money by traveling about the country telling half the truth and manipulating figures to misrepresent than I could make; that I could make more money in that way in one year than I could by faithfully working for the gas company 25 years—that it was one of the easy ways of making money. Take a trifle of knowledge and use one's power of manipulation for the purpose of misrepresenting—that I could make more money that way, but rather than make any such money I would rather be a dog and bay at the moon; that I wouldn't do it. That statement is made with reference to Mr. Bemis' evidence and all of his kind.

Addition. Also add to the cross-examination of George McLean, page 713, the following:

"I recognize the right of the city council to fix the rate. So long as we could have faith in the integrity of the court there was no legitimate interest of the gas company that was menaced."

Q. Then why do you put into your depreciation such astonishing hazards?

A. Because it is wholly in the power of the city council, by giving a reason, or for no reason, it is wholly a matter of their pleasure to

say whether they will permit you to use that property or
919 whether they will deny the right and throw you out into the street and make your property wholly worthless. That is within their power, and hence, if any agitation is conducted against you, you are liable to lose the entire value of your property. I know of such a case. I know where they have failed to renew a franchise. At Waterloo, the council refused to renew the franchise and the property is in the streets without any charter and is of no use. I have been here practically every day since the trial commenced.

Q. You have neglected whatever business you had and have been here energetically and persistently endeavoring to defeat the public?

A. And I think successfully. I am trying as hard as I am able to refute untruth with the truth. Wherever I see falsity, I am trying to point it out, to aid as far as possible to try and get at the exact truth and to get the exact truth to the court in this matter. It is my love of truth and my hatred of misrepresentation and my hatred of the yellow principle in public agitations of this kind, that has brought me here."

Corrections and Additions to Testimony of George B. Dutton.

Correction. Correct the testimony of George B. Dutton, page 717 of appellant's abstract, by striking out the following:

"Plaintiff offers in evidence Exhibit 57, which is objected to for the reasons stated in the last objection. Taken subject to the objection," and substitute in lieu thereof the following:

Defendants object to Exhibit 57 as not rebuttal, as incompetent, irrelevant, and immaterial. It purports to be a statement
920 taken from the books, is an arbitrary amount that has been set aside for depreciation, which amount is not proper in proportion to the capital invested and is not the actual depreciation, and it includes items which are not proper to include in the books for manufacturing and distributing gas.

The testimony of the said George B. Dutton, as shown on pages 716 and 717 of appellant's abstract was taken subject to the further objection that the same was incompetent and because the books and figures testified to contained an arbitrary figure inserted to increase the apparent cost of gas and that the testimony was not rebuttal.

Correction. Correct the cross-examination of George B. Dutton, page 718 of appellant's abstract, as follows:

Strike all that part commencing with the question at the middle of page 718 of appellant's abstract, and ending with the answer near the bottom of page 719, and substitute in lieu thereof the following:

"I presume Mr. Averill got his figures in preparing the answer to interrogatory No. 16, from the books. I could not say whether they are widely different from the figures I have testified to or not. I do not know where Mr. Averill got his figures that the actual cost of manufacturing gas for the year 1902 was $1.05 per M. c. f. I

presume he got the figures that the cost for 1903 per thousand cubic feet of gas sold was 1.219 M. c. f. I do not know whether I got the same figures or not. It is true that Mr. Averill, in the answer to the interrogatories gave the lowest cost for manufacturing and distributing gas at $1.05 per M. c. f. for the year 1902, and it runs
921 from $1.05½ cents up to $1.21. In preparing my schedule marked 57, if the books had contained a statement for one year that $50,000 had been charged to depreciation I would have allowed that account to stand. I simply took the items in the books as they stood. I do not know that the books show that since 1872 down to 1902 only $7,500 had been charged off for depreciation, while for the five years from 1902 to 1906 inclusive, there was charged off to depreciation on these books $65,500.

Q. You say that as to the president, all of his time is given to the business of the Cedar Rapids Gas Light Company.

A. Yes, sir. Mr. Averill conducts a private business with reference to a coal mine from his office. Mr. Rose is the stenographer. He writes the letters for him. I presume Mr. Averill has a large hotel property in Chicago and has more or less work connected with it. Mr. Rose also writes his letters with reference to the hotel property. He also writes his letters with reference to a cotton plantation. I presume that he does. I know in a general way that he does his stenographic work. He does all the stenographic work for Mr. Averill in regard to the coal business, the Mississippi Fuel Co., and his business in the south and the north. I testified that I had examined the books for some telephone companies. Mr. Averill is interested in these companies. I have been on very friendly terms with the Averill family for a number of years, and visit with the family.

Q. Where did you get the record for the gas used at the works during the years 1902, 1903 and 1904?

A. I got the record for the years 1905 and 1906 and took an average for the five years. There was no record for the years
922 1902, 1903 and 1904. I do not know what was done with it. I never made any inquiry to ascertain what was done with those records. I do not think there was anything mysterious about the disappearance of those records. When I went to prepare this report, I was told there was no such record. I assume that the gas used at the works during 1906 bore the same ratio to the gas manufactured that the gas used at the works in 1902, 1903 and 1904 bore to the gas manufactured during those years. I did not know as a matter of fact that they had installed improvements there so that they did not use the same proportion in 1906. If that is correct, as testified to by the foreman in this case, then my estimate would be wrong.

In Exhibit No. 26 the figures 91,118,000 under the column "Meter Sales to the Consumers at Cedar Rapids," the figures 453,100 is the meter sales for that month to the consumers of Marion."

Addition. Correct the cross-examination of George B. Dutton page 720 of appellant's abstract, by adding at the bottom of the said page the following:

"The figures were inserted in Exhibit 26 as soon after the first

of the month as we could get all the meter readings. I have not inserted for the month of November, 1907, because I have not had the books and have not made up the records. I have not inserted it for October, 1907, for the same reason.

Q. Where are the ribbons from which you took the figures you will insert for this month into the book?

A. They have been destroyed.

Q. How are they to be inserted if they have been destroyed.

923 A. I have copies of them. I have not inserted them in Exhibit 26.

Q. Why did you destroy them before you inserted them in the book of original entry?

A. Because I have the copies on one little piece of paper, and the ribbon is about 20 feet long. I have also destroyed it for October. There is absolutely no way of verifying these figures and all that the court can do is to take my word for it."

Further Corrections and Additions to Testimony of Glenn M. Averill.

Correct the testimony of Glenn M. Averill, shown on page 724 of appellant's abstract, by inserting the following objection, "All the testimony given on page 724 of appellant's abstract is objected to by defendants as incompetent, irrelevant, and immaterial, and not rebuttal."

The testimony of Glenn M. Averill, as given on page 725 of appellant's abstract, with regard to the amount of work the stenographer Rose performs for A. T. Averill, was taken subject to the objection that the same was incompetent, irrelevant, and immaterial, and not the best evidence, and not rebuttal.

Addition. Add to the appellant's abstract, before the words "Exhibit 60," middle of page 727, the following:

Admission.

It is admitted that the judgment in the Crago case of $1,000.00 as shown by the transcript, was settled for $650.00 and costs. That the said judgment was recovered as damages on account of

924 Crago stepping into a ditch made by the company, and counsel for the defendants withdraw their objection to the transcript on the ground that it was secondary evidence and incompetent.

Correction. Correct appellant's abstract at the top of page 728 by striking out the following:

"All the evidence relating to Exhibit 60 and said Exhibit was objected to as not being rebuttal, as being incompetent, irrelevant, and immaterial. It was taken subject to the objection," and insert in lieu thereof the following:

"All the evidence of the witness with regard to Exhibit 60 was objected to as incompetent, irrelevant, and im*am*terial, and not

rebuttal, and Exhibit No. 60 was objected to for the same reason, and for the further reason that it is an exhibit prepared after the books have been taken away, and it is apparent on its face that it is incorrect."

Correct appellant's abstract, pages 728 and 729, by inserting at the end of Exhibit 61 the following:

"D-fendants object to the admission of Exhibit 61 for the reason that it is incompetent, irrelevant, and immaterial, and not rebuttal, and is an exhibit prepared after the books of the company have been taken away, and it is apparent on its face that it is incorrect. And for the further reason that the plaintiff has introduced what it claims is the books of the company, and has introduced no book containing the item as shown on Exhibit 61."

925 *Corrections of and Additions to Exhibits.*

Correct the following exhibits, and offers thereof in evidence in the following particular, to-wit:

Correct Exhibit No. 46, page 39 of appellant's abstract, as follows:

Strike from sub-division "C" the following:

"At present there are some tenement houses on these lots, which the company rents," and substitute in lieu thereof the following: "At present there are some thirteen tenement houses on these lots which the company rents, although I understand it has not considered the resources derived therefrom as proceeds from the operation of the gas property."

Also correct said Exhibit No. 46 at the middle of page 41 of the said abstract, by striking the following: "There is enough additional space in this room for a modern 8 ft. by 6 in. water gas apparatus," and substitute in lieu thereof the following: "There is enough additional space in this room for a modern 8x6 water gas apparatus, and I understand a contract for such an apparatus has already been given."

Strike from appellant's abstract the description of the gas holder at No. 14 of Exhibit 46 (Abs. 42), and substitute in lieu thereof the following: "(14) Gas Holder. (76 ft. diameter x 22 ft. deep.) It built in brick tank, single lift, and has a capacity of about 100,000 c. f. It was erected 23 years ago and seems to be in good operating condition. It is now used as a relief holder in connection with the manufacturing of water gas."

926 Addition. Add to the description of the gas holder division 15 of Exhibit 46 (Abs. 42), the following:

"It is old and out of repair, and not now in use."

Correction. Also correct the said exhibit on page 50 by striking out the figures set opposite the words "No. 2 Holder, $1,500.00," and insert in lieu thereof the figures as originally printed, "$15,000."

Correct Exhibit 10 as shown on page 303 and 304, bottom 307, 308, and top of page 309, by striking all that portion of said exhibit, commencing on the bottom of page 307 and ending at the middle of page 309, and substituting in lieu thereof the following:

"Reserve for depreciation of physical property only; does not cover reserve for other physical hazards, economic hazards, or political or sociologic hazards."

Physical property.	Schedule value.	Rate for average dep. cost.	Annual depreciation.
Land	30,000.00	Nothing	
Thirteen frame houses	6,500.00	Nothing ch'g'd	
Coke shed (wooden)	1,200.00	4 %	48.00
Coal storage (wooden)	6,450.00	3 %	193.50
Stable (brick)	1,250.00	2½%	31.25
Work shop (brick)	1,500.00	2½%	37.50
Works store room (brick)	1,450.00	2 %	29.00
Apparatus room (brick)	3,745.00	2 %	74.90
Boiler house (brick)	900.00	2½%	22.50
Purifying room (brick)	5,800.00	2 %	116.00
Retort house (brick)	7,850.00	5 %	392.50
Retaining wall	1,100.00	2 %	22.00
Riprapping	750.00	2 %	15.00
Tanks, cisterns and pits	2,760.00	5 %	138.00
	71,255.00		1,794.25
Benches	16,867.00	7 %	1,180.69
Boilers, engines and exhausters	4,990.00	7 %	349.30
Condensers, scrubbers and accessories	6,205.00	3 %	186.15
Purifiers	5,000.00	4 %	200.00
Station meters	2,700.00	4 %	108.00
Station governor	625.00	3 %	18.75
Ammonia plant	3,000.00	5 %	150.00
Tools	1,139.50	10 %	113.95

927

Physical property.	Schedule value.	Rate for average dep. cost.	Annual depreciation.
Scales	270.00	5 %	13.50
Yard and works connections	2,816.00	7 %	197.12
Pumps	255.00	10 %	25.50
Water gas generator	4,500.00	8 %	360.00
Holders	62,500.00	2½%	1,562.50
Mains, wrought iron; 43.3% of $118,986.00	56,280.00	3 %	1,688.40
Mains, cast iron	62,706.00	2 %	1,254.12
Services	15,289.00	7 %	1,070.23
Meters and connections	29,384.00	7 %	2,056.88
Arc lamps	3,575.00	10 %	357.50
Office furniture	1,876.00	7 %	131.32
Horses and wagons	1,110.00	10 %	111.00
Materials	7,298.50	Nothing ch'g'd	
Stoves	1,668.00	Nothing ch'g'd	
Coal	4,520.00	Nothing ch'g'd	
	$365,829.00		$12,929.16

Correction. Correct Exhibit 12, bottom of page 340 of appellant's abstract, by striking out the following:

"Political Hazards—Contingencies of Franchise Renewals, Granting of Franchises to Rivals, Taxation of Rates, Policy of State," and substitute in lieu thereof the following:

"Political Hazards—Contingencies of Franchise Renewals, Granting of Franchise to Rivals, Taxation Campaigns, Regulation of Rates, Policy of State."

Correction. Strike Exhibit No. 21 as found on pages 403 and 404 of appellant's abstract, and insert in lieu thereof the following:

"Exhibit prepared by Edward Pratt,
from Brown's Directory.
"Comparison by Send-out.
From 75,000,000 c. f. to 125,000,000.

	Population.	Send out.	Price per M.			C. P.
Little Rock, Arkansas	60,000	100,000,000 c. f.	1.25		1.25	18
San Diego, California	35,000	100,000,000 c. f.	1.10		1.10	22
San Jose, California	35,000	127,216,000 c. f.	1.25		1.25	22
Pueblo, Colorado	40,000	100,000,000 c. f.	1.50		1.00	18
Derby, Connecticut	28,000	134,000,000 c. f.	1.10		1.10	20
Meriden, Connecticut	30,000	112,000,000 c. f.	1.15		1.15	18
New Britain, Connecticut	28,000	93,000,000 c. f.	1.15		1.15	18
Stamford, Connecticut	20,000	70,000,000 c. f.	1.25		1.25	27
Augusta, Georgia	50,000	79,500,000 c. f.	1.50		1.00	20
Bloomington, Illinois	40,000	110,000,000 c. f.	1.00		1.00	18
East St. Louis, Illinois	50,000	110,000,000 c. f.	1.10		1.10	22
Galesburg, Illinois	22,000	71,000,000 c. f.	1.15		1.00	16.5
Moline, Illinois	40,000	105,000,000 c. f.	1.125		1.125	21
Quincy, Illinois	40,000	90,000,000 c. f.	1.00		1.00	18
Rockford, Illinois	38,000	141,000,000 c. f.	1.05		1.05	17
Streator, Illinois	19,000	40,000,000 c. f.	1.25		1.25	20
Waukegan, Illinois	24,000	140,000,000 c. f.	1.00		1.00	20
Hammond, Indiana,	50,000	130,000,000 c. f.	1.00		1.00	18
Burlington, Iowa	26,500	82,000,000 c. f.	1.50		1.50	22
*Cedar Rapids, Iowa	35,000	110,000,000 c. f.	1.15	to	1.00	22
Clinton, Iowa	25,000	75,000,000 c. f.	1.00		1.00	17
Davenport, Iowa	45,000	100,000,000 c. f.	1.25		1.25	22
Dubuque, Iowa	40,000	123,000,000 c. f.	1.00		1.00	17
Brockton, Massachusetts	47,794	109,871,600 c. f.	1.25		1.25	17
North Adams, Massachusetts	22,000	75,000,000 c. f.	1.35		1.08	18
Pittsfield, Massachusetts	25,000	80,000,000 c. f.	1.25		1.25	18
Salem, Massachusetts	50,000	105,000,000 c. f.	1.20		1.20	17.5
Taunton, Massachusetts	32,000	78,000,000 c. f.	1.10		1.10	17
Ann Arbor, Michigan	18,000	104,000,000 c. f.	1.00	to	.60	18
Battle Creek, Michigan	25,000	125,000,000 c. f.	1.00		1.00	18
Lansing, Michigan	25,000	90,000,000 c. f.	1.17		.945	18
Port Huron, Michigan	22,000	90,000,000 c. f.	1.20		.80	18
Springfield, Missouri	25,000	75,000,000 c. f.	1.00		1.00	18

* In bold-face type in copy.

	Population.	Send out.	Price per M.			C. P.
Plainfield, New Jersey	39,000	100,000,000 c. f.	1.15		1.15	22
Auburn, New York	35,000	90,000,000 c. f.	1.13		1.13	18
Flushing, New York	21,000	127,000,000 c. f.	1.20		1.20	22
Gloversville, New York	30,000	85,500,000 c. f.	1.30		1.30	23
Newburgh, New York	27,000	75,000,000 c. f.	1.20		1.20	21
Poughkeepsie, New York	24,000	85,000,000 c. f.	1.20	to	1.00	22.5
Watertown, New York	28,000	74,000,000 c. f.	1.50		1.50	20
Springfield, Ohio	40,000	100,000,000 c. f.	1.00		1.00	20
Allentown, Pennsylvania	45,000	107,111,000 c. f.	1.10		1.10	23
Easton, Pennsylvania	50,000	95,000,000 c. f.	1.25		1.25	22
Johnstown, Pennsylvania	45,000	92,500,000 c. f.	1.20		1.00	19
Williamsport, Pennsylvania	45,000	80,000,000 c. f.	1.50		1.00	22
York, Pennsylvania	50,000	90,000,000 c. f.	1.10		1.10	26
Newport, Rhode Island	25,000	85,000,000 c. f.	1.30		1.30	18
Charleston, North Carolina	60,000	104,098,000 c. f.	1.60		1.20	18
Chattanooga, Tennessee	50,000	116,000,000 c. f.	1.00		1.00	17
Knoxville, Tennessee	55,000	120,000,000 c. f.	1.00		1.00	18
Fort Worth, Texas	45,000	75,000,000 c. f.	1.80		1.33	18
Spokane, Washington	76,000	120,000,000 c. f.	1.50		1.50	17.5
Tacoma, Washington	75,000	110,000,000 c. f.	1.25		1.25	18
Wheeling, West Virginia	40,000	116,000,000 c. f.	.75		.75	16
Madison, Wisconsin	24,000	91,000,000 c. f.	1.25		1.25	16
Average	2,051,294	4,411,796,600 c. f.	1.19		1.12	19

930 Exhibits 20 and 21 are objected to by the defendants as incompetent, irrelevant, and immaterial, for the reason that the information contained in the exhibits is as accessible to the court as to the gas company, and to the witness. The witness having selected certain towns for the purpose of reaching certain results, and selected towns which are not applicable to the plaintiff's system, and for the further reason that the prices fixed or received by gas companies in other towns cannot be made the basis of a rate or of determining the reasonableness of this ordinance. Further it is wholly hearsay, and this objection is to apply to each and every question propounded to the said witness touching the subject of the said exhibits.

Correct Exhibit 47 as shown on pages 11, 12 and 13 of appellant's abstract, by adding thereto the following section:

"SECTION 9. The said W. H. Whitta & Co. undertake and agree to and with the said city to erect within the limits specified, and in the time before mentioned, and to permanently maintain good, complete capacious and substantial gas works, equal to the best in any city of the same population in the state, until the expiration of the time of this grant, and to make and furnish the said city and the citizens thereof a good quality of gas, equal at least in quality to the best gas works in the State of Iowa."

Correct Exhibit 50 (See Abstract 297 top), by adding the following interrogatories and answers which were omitted from appellant's abstract:

931 *Answers to Interrogatories.*

Comes now the plaintiff above named and by and on the oath of its president, A. T. Averill, makes and submits the following answers and facts as answers to the interrogatories attached to and filed with the answer of defendants.

Int. 20. State what the physical property of the gas company, which is used in the manufacture and distribution of gas, consists of in detail, under the following divisions: (1) Real Estate. Location and dimension of each tract, with statement as to how each tract is utilized. (2) Buildings. Location, size, character of each, buildings owned, when built, the materials used in building the same, the cost thereof, how utilized. (3) Works and Apparatus. Complete description of each apparatus installed in works, giving dimensions, capacity and conditions of same, and date of installation, when possible. (4) Holders. Complete description of each holder, with capacity of same and date of installation. (5) Service. Number of each, size of service, owned by said company, and the number in use December 31, 1906. (6) Meters. Number in use, number owned by said gas company, type and size of each, as of December 31, 1906. (7) Miscellaneous. Detailed description of all other physical property of said company not included in the above schedule; (*a*) pintch, (*b*) manufacturing tools, (3) distribution tools, (*d*) meter shop tools, (*e*) stable equipment, (*f*) office furniture and fixtures.

Answer. Physical property of the Cedar Rapids Gas Light Company, Cedar Rapids, Iowa.

932 Land. (A). The works are located in Fractional Block 9, Lots 1, 2, 3, 4, and 5, Original Cedar Rapids; and are bounded by Seventh avenue on the north, First street on the east, Eighth avenue on the south, and the Cedar River on the west. The dimensions of this piece of ground is 420 feet long by 140 feet deep, and is irregular in shape, and width, owing to the course of the river on the west side of property.

(B) The land upon which new holder is located is south of that described above and is separated by an 80 foot street (Eighth avenue), and is bounded as follows: On the north by Eighth avenue, on the east by First street, on the south by Ninth avenue, and on the west by the river. This land is described as Lots 1 and 2 in Fractional Block 10, Original Cedar Rapids, and is 120 feet long by about 140 feet deep.

(C) The company recently acquired and owns Block 9, Lots 1, 2, 3, 4 and 5, of Original Cedar Rapids. This property is to the east and directly across the street from the land upon which the works proper is located, and was purchased in anticipation of future needs, as the company had no land upon which to make future extensions of the character that will be required. At present there are some tenement houses, which the company rents.

Buildings. The buildings and structures occupying the above (A) mentioned ground space, and used by the company in the conduct of its business are as follows:

(1) Shop Building. (50 ft. x 20 ft. x 19 ft.), is of brick, with corrugated iron roof and is used for shop purposes, the repair and storage of meters, etc.

(2) Store Room. (37 ft. x 26 ft. x 19 ft.), is of brick, with corrugated iron roof on iron trusses. Is used for general storage purposes, such as retorts, brick, fire brick blocks, fire clay, cement, special fittings, etc.

933 (3) Coal Shed or Store. (77 ft. x 50 ft.), the roof is supported by 22 ft. x 8 in. "I" beams, 30 ft. long, set in two (2) feet of concrete; corrugated iron roof. The sides are planked with 3 in. plank that are held in place by the "I" beams and are removable at will, to facilitate the unloading of coal. The total capacity of this store is about 2,000 tons. There is a railroad siding upon two sides of building, so that cars can be unloaded from either side at will.

(4) Retort House. (120 ft. x 36 ft.), is of brick with 19 ft. trusses. Slate roof having 10-24 in. iron ventilators. There is a basement with about 8 ft. head room under one-half of this building. Corrugated iron floor.

Room contains three benches of 9 retorts each, constructed with the full depth furnaces of the Parker-Russell type. These benches are complete with hydraulic main stand pipes, mouth pieces, self-sealing lids, and retorts 16 in. x 28 in. x 9 ft. Also 3 benches of 6 retorts each constructed with so-called half-depth furnaces of the La Clede type, complete with hydraulic main, stand pipes, mouth

pieces, self-sealing lids and retorts 14 in. x 26 in. x 9 ft. These benches have not been used since they were last refilled and are therefore, practically as good as new. They are of the La Clede construction, and are held in reserve to be used whenever repairs shall be necessary to any of the benches of 9's. Also, (1) one water gas apparatus, 6 ft. diameter, complete with generator carburetter and superheater together with engine and blower, and such other accessories as are required in the operation of a water gas apparatus. This apparatus though somewhat antiquated in point of detail, is believed to have a daily producing capacity of the modern water gas machine of 5 ft. in diameter.

934 There is enough additional space in this room for a modern 8 ft. 6 in. water gas apparatus.

(5) Coal Room. This is the space referred to above in which a new water gas set is to be placed, and which is really a part of the retort house, but is now used as the receptacle for boiler fuel.

(6) Boiler House. (22 ft. x 27 ft. x 19 ft.), is of brick with gravel roof, and contains 2-16 ft. x 72 in. horizontal tubular boilers, the capacity which is about 125 H. P. each. These boilers though second hand are practically as good as new. They are equipped with a steel stack 40 in. in diameter x 60 ft. high.

(7) Meter and Office Room. (32 ft. x 20 ft. x 19 ft.), is of brick with shingle roof. Contains 1-9 ft. x 9 ft. station meter, with 16 in. by-pass connections. Also some office furniture.

(8) Scrubber and Condenser Room. (38 ft. x 32 ft. x 23 ft.), including basement the floor of which is cement concrete. This room contains the scrubbing and condensing apparatus and will be enumerated later on.

(9) Engine Room. (28 ft. x 32 ft. x 19 ft.), is of brick, with wooden trusses and shingle roof, contains the engines, exhausters, compressors and station meter.

(11) Purifying Building. (50 ft. x 60 ft. x 30 ft.), is of brick, wooden trusses, gravel roof, concrete floor in basement, wooden floor above, with concrete foundations. Contains: 4-16 ft. x 22 ft. x 3 ft. purifying boxes, complete with center seal, and 16 in. connecting pipes; also carriages for handling covers to boxes.

935 (12) Brick Pump Pit. (7½ ft. x 10 in.), is of brick and stone construction. Is used to house river pumps of which there are two.

(13) Wooden Coke Shed. (38 ft. x 42 ft. x 20 ft.), wooden trusses, concrete floor, corrugated galvanized iron roof; shed is open on three sides, and boarded one-third down from top, used to dump and store coke in as it is hauled from retort house. Capacity about 600 tons.

(14) Gas Holder. (76 ft. diameter x 22 ft. deep), is built in brick tank, single lift, and has capacity of about 100,000 cubic feet. Was erected 23 years ago and is in good operating condition. Is now used as a relief holder in connection with the manufacture of water gas.

(15) Gas Holder. (40 ft. diameter x 19 ft. deep), built in brick tank, single lift, and originally had capacity of 30,000 cubic feet.

(16) Stable. (24 ft. x 30 ft.), two (2) stories and basement. Built of brick, wooden trusses, concrete floor, gravel roof, has room for six (6) horses in basement, and complement of wagons on second floor.

(16a) Fences and Foundation Walls. On the north and west sides of stable foundations form part of a retaining wall which are the boundaries of the property at this point. This wall is very substantial and averages 20 ft. high on the north side and is about 50 ft. long, while on the west side it is 80 ft. long with an average height of 10 ft.

There is also about the property some 300 feet tight board fence, eight (8) feet high, and along the river side a rip-rap of stone to keep the earth in place.

936 The following schedules show the property in detail with the value of the same.

SCHEDULE A.

(1) *Contents of Shop.*

1-14 in. x 8 ft. Fairbanks Mach. Co.'s lathe	$200.00	
1-6 in. x 2 ft. Barnes foot lathe	25.00	
1-18 in. Barnes drill press	40.00	
40 ft. 1 11-16 line shafting	75.00	
1 H. G. meter prover	100.00	
1-5 in. Holland machine vice	5.00	
1-90 lb. Peter Wright, Smiths' anvil	4.50	
1-160 lb. Peter Wright, Smiths' anvil	8.00	
Work bench and tools	125.00	
100-5 and 10 lt. meters (in repair)	562.50	
Lead pipe, pipe, and fittings	150.00	
1-6 H. P. engine (old)	25.00	
Total		$1,320.00

(2) *Contents of Store Room.*

2 extra fillings, Parker-Russell full benches of 9's	$1,620.00	
Extra fire brick	100.00	
50 ft. 6 in. cast iron pipe, stand pipe	31.00	
60 ft. 4 in. cast iron pipe	18.60	
937		
1-16 in. inside screw valve	45.00	
1-10 in. inside screw valve	24.00	
1 No. 5 Sturtevant blower	75.00	
1 steam pump (old)	25.00	
3 coils rope yarn	10.00	
Sundry small stuff	25.00	
Total		$1,973.00

(3) *Contents of Coal Store.*

1000 tons Youghy gas coal at $4.52	4,520.00	
1 set Howe 8 ft. x 4 ft., 4 ton scales	75.00	
2 steel coal wagons	75.00	
Total		$4,670.00

(4) *Contents of Retort House.*

3 benches of 9's, full depth complete with hydraulic main, stand pipe, mouth pieces, etc.	$9,800.00	
3 benches of 6's, half depth, complete with hydraulic main, stand pipes, mouth pieces, etc.	6,750.00	
1-6 ft. water gas set complete with generator, carburetter, and superheater	4,500.00	
1 engine and blower	250.00	
Blast pipe	40.00	
Tools, consisting of barrows, shovels, rakes, bars, etc.	75.00	
250 ft. 10 in. foul main, leading from hydraulic main to exhausters, erected	317.00	
938		
1 water gas coaling hopper	15.00	
Total		$21,747.00

(5) *Contents of Coal Room.*

Empty, used to receive boiler fuel in now. A new 8 ft. 6 in. water gas set has been contracted for, to be placed here.

(6) *Contents of Boiler Room.*

2-16 in. x 72 in. horizontal tubular boilers and settings	$2,100.00	
1 steel stack, 40 in. diameter x 60 ft. high	250.00	
2-1¼ in. Hancock injectors	25.00	
1 set 6 in. x 4 in. (4 ton) Howe scales	70.00	
Tools, consisting of shovels, rakes, pokers, slice bars, etc	25.00	
Total		$2,470.00

(7) *Contents of Meter and Office Room.*

1-9 ft. x 9 ft. station meter	$2,100.00	
Desk, chairs, etc.	10.00	
2 Bristol recording guages	80.00	
1 Jones jet photometer	10.00	
1 U pressure guage	2.00	
Total		$2,202.00

939 (8) *Contents of Scrubber and Condenser Room.*

1-23 ft. x 8 ft. condenser with 171 3 in. tubes	.....	
The inlet and outlet connections thereto are 16 in.	$1,800.00	
1-8 ft. x 4 ft. rectangular washer	480.00	
1-20 ft. x 8 ft. scrubber (equipped with trays)	1,800.00	
1-20 ft. x 8 ft. final scrubber (equipped with trays)	1,800.00	
1-36 in. ammonia concentrator, complete with stills, absorber, etc.	3,000.00	
1 Tar separator	150.00	
12-16 in. valve at inlet and outlet connections, including connecting pipes	840.00	
Total		$9,870.00

(9) *Contents of Engine Room.*

2-8 H. P. Troy engines	$350.00	
2-10 in. (No. 3) Connersville exhausters	750.00	
1-10 in. P. and A. tar extractor	175.00	
1-6 in. station meter (W. G.)	600.00	
2-6 in. x 10 x 6 in. Clayton compressors	1,250.00	
Total		$3,125.00

(10) *Platform Wagon Scales.*

6 tons' capacity	200.00	$200.00

940 (11) *Contents of Purifying Building.*

4-16 ft. x 22 ft. x 3 ft. purifying boxes, complete with center seal, connecting pipes (16 in.), carriages for handling covers, etc.	5,000.00	
4100 bushels oxide at $—	615.00	
Total		$5,615.00

(12) *Contents of Pump Pit.*

1-6 x 4 in. x 6 Duplex Worthington pump	$90.00	
1-7½ x 4½ in. x 10 in. Duplex Worthington pump	140.00	
Total		$230.00

(13) *Contents of Coke Shed.*

Averages twenty (20) tons coke on hand for sale	$110.00	$110.00

(14) *Contents of No. 1 Holder.*

Averages 40,000 cubic feet		$20.00

(15) *Contents of No. 2 Holder.*

Not in use.

941

(16) *Contents of Stable.*

1-3 ton dray	$100.00	
1 bob sled	45.00	
1 pipe wagon	90.00	
1 heavy team horses	400.00	
2 medium horses	300.00	
2 fitting wagons	175.00	
Hay, grain, bedding, etc.	75.00	
Total		$1,185.00

(17) *Contents Governor Pit.*

1-12 in. Connelly automatic governor	$550.00	
16 in. by pass connections	75.00	
Total		$625.00

(18) *Contents of No. 3 Holder.*

400,000 cu. ft. purified gas ready for distribution		$400.00

(19) *Contents of Ammonia Well.*

10,000 gallons weak ammoni-cal liquid on hand 1907	$100.00	$100.00

(20) *Contents of Tar Well.*

12,000 gallons tar on hand. 1907	$300.00	$300.00

942

(21) *Contents of Oil Tank.*

10,000 gal. of oil on hand, 1907.....	$458.00	$458.00

(22) *Contents of Concentrated Ammonia Tanks.*

4,000 lbs. on hand, 1907.....	$250.00	$250.00

(23 *and* 24) *Contents of Tar Cisterns.*

2,000 gal. tar on hand, 1907.....	$50.00	$50.00

(25) *Miscellaneous Material.*

60 ft. 1½ in. W. D. pipe, covered.....	$12.00	
1,000 ft. small pipe (¾ in., 1½ in.) for steam and water.....	60.00	
300 ft. 2 in. steam pipe, covered.....	65.00	
250 ft. 2 in. oil pipe (and boxed).....	80.00	
175 ft. 2 in. ammonia pipe.....	17.50	
150 ft. 2 in. galvanized iron water pipe...	22.50	
150 ft. W. I. pipe (4 in.).....	45.00	
80 ft. 4 in. C. I. pipe (ammonia).....	28.00	
150 ft. 1¼ in. W. I. steam pipe, covered..	24.00	
300 ft. W. I. steam pipe, covered.....	45.00	
300 ft. ¾ in. W. I. steam pipe, covered..	45.00	
500 ft. 3 in., 2 in., and 1½ in. pipe, fire protection	60.00	
2 lengths (24 ft.) 20 in. C. I. pipe.....	49.00	
2½ lengths (30 ft.) 16 in. C. I. pipe....	52.00	

943

11 lengths (132 ft.) 12 in. C. I. pipe....	153.50	
11 lengths (132 ft.) 10 in. C. I. pipe....	114.50	
37½ lengths (450 ft.) 6 in. C. I. pipe...	209.00	
3 lengths (36 ft.) 4 in. C. I. pipe.....	11.00	
6-4 in. x 6 in. crosses.....	27.00	
7-6 in. Tees	25.00	
Total.....		$1,145.00

(26) *Second Hand Material.*

4-10 ft. x 12 ft. x 3 ft. purifiers, complete with 10 in. connection.....	$1,000.00	
1 No. 4 Root exhauster.....	150.00	
1-4 ft. station meter (old).....	200.00	
1-4 ft. x 4 ft. x 10 ft. C. I. condenser with 144 tubes	250.00	
Total.....		$1,600.00

(27) *Yard Connections.*

80 ft. 20 in. cast iron pipe	$200.00
184 ft. 16 in. cast iron pipe	401.00
174 ft. 12 in. cast iron pipe	252.00
270 ft. 10 in. cast iron pipe	304.00
325 ft. 6 in. cast iron pipe	211.00
270 ft. 5 ft. W. I. pipe	108.00
Total	$1,476.00

SCHEDULE B.

(28) *Street Mains (Laid).*

27,450 ft. 2 in. W. I. pipe (E. S.)	$3,902.00
944	
34,275 ft. 2 in. W. I. pipe (W. S.)	4,884.00
39,450 ft. 3 in. W. I. pipe (E. S.)	9,953.00
19,550 ft. 3 in. W. I. pipe (W. S.)	4,932.00
17,200 ft. 4 in. W. I. pipe (E. S.)	6,267.00
6,900 ft. 4 in. W. I. pipe (W. S.)	2,510.00
1,600 ft. 6 in. W. I. pipe (bridge)	768.00
8,400 ft. 3 in. W. I. pipe (H. P.)	426.00
5,400 ft. 4 in. C. I. (No. 20) (E. S.)	2,592.00
13,650 ft. 4 in. C. I. " (W. S.)	6,552.00
21,300 ft. 6 in. C. I. (No. 30) (E. S.)	14,271.00
8,650 ft. 6 in. C. I. " (W. S.)	5,795.00
6,550 ft. 10 in. C. I. (No. 56)	7,434.00
3,950 ft. 12 in. C. I. (75 lb.)	5,727.00
550 ft. 16 in. C. I. (112 lb.)	1,199.00
23,760 ft. 3 in. H. P. connecting with Marion system of mains	5,483.00
Add for 15000 ft. under asphalt	8,000.00
Add for 68900 ft. under brick	28,291.00
Total	$118,986.00

Specials.

2-16 in. Tees	722 lbs. each
2-12 in. Tees	406 lbs. each
2-12 in. Ells	288 lbs. each
1-10 in. Tee	294 lbs. each
3-10 in. crosses	382 lbs. each
2-10 in. (45) Ells	224 lbs. each
18-6 in. Tees	98 lbs. each
1-6 in. Ells	76 lbs. each
3-6 in. crosses	128 lbs. each
16-4 in. Tees	67 lbs. each

	22-4 in. crosses	89 lbs. each	
945	1-4 in. (45) Ells	55 lbs. each	
	5-10 in. x 6 in. Tees	242 lbs each	
	4-10 in. x 6 in. crosses	276 lbs. each	
	8-6 in. x 4 in. crosses	113 lbs. each	
	12,905 lbs. specials	$387.00	
	1-12 in valve	30.00	
	1-10 in valve	24.00	
	9-16 in. valves	108.00	
	6-4 in. valves	60.00	
	15-3 in. valves	100.00	
	4-6 in. expansion joints	80.00	
	3-4 in. expansion joints	45.00	
	3-3 in. expansion joints	36.00	
	Total		$870.00

(29) *Service Connections (Laid).*

	4,000 service connections from main to curb, 20 ft. each of 1 in., 1¼ in. and ½ in. W. I. pipe laid	$8,000.00	
	Add for 5,334 ft. under asphalt	2,844.00	
	Add for 10,668 ft. under brick	4,445.00	
	Total		$15,289.00

(30) *Meters (Set).*

	3 lights—1830 at $6.50	$11,895.00	
	5 lights—1173 at $7.83	9,184.00	
	10 lights—742 at $9.50	7,049.00	
	20 lights—16 at $12.75	204.00	
	30 lights—33 at $17.00	561.00	
946	45 lights—14 at $24.25	339.00	
	80 lights—1 at $44.35	44.00	
	100 lights—2 at $54.00	108.00	
	Total—3811 lights		$29,384.00

(31) *Contents of Office (Up Town).*

	15 ft. x 3 ft. x 3 ft. Diebold safe	$225.00
	1 flat top desk	35.00
	2 roll top desks	80.00
	1 small desk	25.00
	1 table	15.00
	1 copying machine	25.00
	1 addressograph	150.00
	1½ pe-tition at rear of office	225.00
	1 counter	500.00

4 pieces rubber matting	15.00	
2-4 light fixtures	10.00	
1-16 in. display fixture	50.00	
1 arc lamp	6.00	
1 recording pressure gauge	40.00	
6 gas ranges	90.00	
Books, stationery, etc	300.00	
Map of mains	75.00	
Total		$1,866.00

(32) *Contents of Shop at Office.*

1 roll top desk	$35.00	
1 drill press		
Welsbach lamp supplies	250.00	
Arc lamp supplies	125.00	
947 50 meters for use	283.00	
Pipe and fittings	175.00	
Work bench	40.00	
Tools	100.00	
Water heaters	50.00	
Total		$1,058.00

(33) *Arc Lamps and Fixtures.*

550 arc lamps rented or loaned to customers, but property of company	$3,575.00	$3,575.00

Valuation.

(A) Land upon which works are located	$15,000.00
(B) Land upon which new holder is located	5,000.00
(C) Land recently purchased	10,000.00
(D) 13 Frame houses	6,500.00
(1) Shop building	1,500.00
(2) Store room building	1,450.00
(3) Coal store building	6,450.00
(4) Retort house, (includes Nos. 7, 8, 9)	7,850.00
(5) Coal gas app. room	3,745.00
(6) Boiler house	900.00
(10) Platform wagon scales	
(11) Purifying building	5,800.00
(12) Pump pit	175.00
(13) Wooden coke shed	1,200.00
(14) No. 2 Holder	15,000.00
948 (15) No. 1 holder	5,000.00
(16) Stable	1,250.00

Retaining wall and fences	1,100.00	
Reprapping on river bank	750.00	
(17) Governor pit	250.00	
(18) No. 3 holder	42,500.00	
(19) Am-onia well	300.00	
(20) Tar well	175.00	
(21) Iron oil tank	730.00	
(22) Concentrated ammonia tank	730.00	
(23) and (24) Tar cisterns	400.00	
Total		$133,755.00
Amounts forwarded		$232,169.00
(1) Contents of shop (See schedule)	$1,320.00	
(2) Contents of store room (See schedule)	1,973.00	
(3) Contents of coal store (See schedule)	4,670.00	
(4) Contents of retort house (See schedule)	21,747.00	
(5) Contents of coal room (See schedule)		
(6) Contents of boiler house (See schedule)	2,470.00	
(7) Contents of meter and office room (See schedule)	2,202.00	
(8) Contents of scrubber and condenser room (See schedule)	9,870.00	
(9) Contents of engine room (See schedule)	3,125.00	
(10) Contents of platform wagon scales (See schedule)	200.00	
(11) Contents of purifying building (See schedule)	5,615.00	
(12) Contents of pump pit building (See schedule)	230.00	
(13) Contents of coke shed building (See schedule)	110.00	
(14) Contents of No. 1 holder Cu. ft	20.00	
(15) Contents of No. 2 holder (See schedule)		
(16) Contents of stable (See schedule)	1,185.00	
(17) Contents of governor pit (See schedule)	625.00	
(18) Contents of No. 3 holder cu. ft	400.00	
(19) Contents of am-onia well	100.00	
(20) Contents of tar well	300.00	
(21) Contents of oil tank	458.00	
(22) Contents of concentrated ammonia tank	250.00	
(23) and (24) Contents of tar cisterns	50.00	

(25) Miscellaneous material	1,145.00	
(26) Second hand	1,600.00	
(27) Yard connections	1,476.00	
(28) Street mains and specials	119,856.00	
(29) Service connections	15,289.00	
(30) Consumers' meter	29,384.00	
(31) Contents of up town office	1,866.00	
950 (32) Contents of shop at office	1,058.00	
(33) Arc lamps and fixtures	3,575.00	
Total		$232,169.00

Valuation.

Land, buildings and structure	$133,755.00	
Contents of buildings and structure	58,065.00	
Second hand material	1,600.00	
Yard connections	1,476.00	
Street mains and specials	119,856.00	
Service and meters	44,673.00	
Contents of office and shop	2,924.00	
Arc lamps loaned	3,575.00	
		$365,924.00
Working capital should be added as a part of investment, upon which earnings should be made	25,000.00	
Total		$390,924.00

Affiant further says that the value of the plant and works of the Cedar Rapids Gas Light Company as herein set out is the true and actual present value of the same and has been ascertained from affiant's knowledge of the work and plant in conjunction with expert gas plant engineers, who have also made a full and complete examination and valuation upon the same. Affiant further says that he has been president of the Cedar Rapids Gas Light Company for many years, and is familiar with the cost of constructing all its parts and has knowledge of the cost of all materials and labor
951 entering into the construction of Gas plants, and knows the present prices that would prevail in the replacement of the plant at the present time, and this knowledge has been gained from many years of purchase of the materials entering into the plant and of a study of the markets, and the foregoing is a fair and reasonable value of the works of the Cedar Rapids Gas Light Company. Except the water gas machinery erected in 1907 which is not included.

Int. 39. State the number of gas stoves sold by the Cedar Rapids Gas Light Company during the year ending December 31st, 1906, giving the names of the purchasers and the amount paid therefor by each purchaser, and state the name, size and number of the makes

of each of such stoves. State the price paid by you for each of such stoves and if you have an inventory or a copy thereof, attached said inventory, or a copy thereof, as a part of your answer to this interrogatory.

Answer. The Cedar Rapids Gas Light Company sold 336 gas stoves during the year ending Dec. 31st, 1906, affiant is unable to state the names of the purchasers, also is unable to state the size and make of the stoves, and cannot attach the same thereto.

Int. 40. Give the names of ten (10) of the largest consumers of gas for the year ending December 31st, 1906, and take the amount consumed each month during said year by each of said consumers and the net amount paid for gas by each of said ten (10) consumers.

Answer. The ten largest consumers of the Cedar Rapids Gas Light Company during the year 1906, were:

U. S. Building—For the year 1906, month of January, 92,200 cu. ft., $101.42; February, 75,800 cu. ft., $83.38; March,
952 79800 cu. ft., $87.78; April, 73,200 cu. ft., $80.52; May, 60,000 cu. ft., $66.00; June, 51,700 cu. ft., $56.87; July, 49,200 cu. ft., $54.12; August 47,700 cu. ft., $52.47; September, 45,600 cu. ft., $50.16; October, 82,500 cu. ft., $90.75; November, 94,300 cu. ft., $103.73; December, 96,900 cu. ft., $106.59.

Republican Printing Co.—For the year 1906, month of January, 68,200 cu. ft., $68.20; February, 60,700 cu. ft., $60.70; March, 71,000 cu. ft., $71.00; April, 69,000 cu. ft., $69.00; May, 67,700 cu. ft., $67.70; June, 63,400 cu. ft., $63.40; July, 58,400 cu. ft., $58.40; August, 63,800 cu. ft., $63.80; September, 58,300 cu. ft., $58.30; October, 67,300 cu. ft., $67.30; November, 67,700 cu. ft., $67.70; December, 67,500 cu. ft., $67.50.

New Process Laundry—For the year 1906, month of January, 32,900 cu. ft., $36.19; February, 29,800 cu. ft., $32.78; March, 35,500 cu. ft., $39.05; April, 31,000 cu. ft., $34.10; May, 36,200 cu. ft., $39.82; June, 39,500 cu. ft., $43.45; July, 32,000 cu. ft., $35.20; August, 37,600 cu. ft., $41.36; September, 33,700 cu. ft., $37.07; October, 38,500 cu. ft., $42.35; November, 37,000 cu. ft., $40.70; December, 35,500 cu. ft., $39.05.

Parlor City Laundry—For the year 1906, month of January, 27,700 cu. ft., $30.47; February, 25,600 cu. ft., $28.16; March, 26,400 cu. ft., $29.04; April, 22,100 cu. ft., $24.31; May, 25,800 cu. ft., $28.38; June, 25,400 cu. ft., $27.94; July, 24,300 cu. ft., $26.73; August, 28,700 cu. ft., $31.57; September, 31,800 cu. ft., $34.98; October, 37,500 cu. ft., $41.25; November, 28,300 cu. ft., $31.13; December, 26,100 cu. ft., $28.71.

Gorman Hotel—For the year 1906, month of January, 29,100 cu. ft., $32.01; February, 24,900 cu. ft., $27.39; March, 27,200 cu. ft., $29.92; April, 25,400 cu. ft., $27.94; May, 20,600 cu. ft.,
953 $22.66; June, 18,300 cu. ft., $21.05; July, 18,400 cu. ft., $21.16; August, 12,300 cu. ft., $25.30. September, 19,400 cu. ft., $22.31; October, 30,200 cu. ft., $33.22; November, 35,900 cu. ft., $39.49; December, 34,900 cu. ft., $38.29.

Reps & Junck—For the year 1906, month of January, 33,300 cu. ft., $36.63; February, 25,700 cu. ft., $28.27; March, 30,000 cu. ft., $33.00; April, 25,300 cu. ft., $27.83; May, 24,000 cu. ft., $26.40; June, 22,600 cu. ft., $24.86; July, 21,400 cu. ft., $23.54; August, 22,100 cu. ft., $24.31; September, 20,900 cu. ft., $22.99; October, 30,500 cu. ft., $33.55; November, 36,400 cu. ft., $40.04; December, 51,700 cu. ft., $51.70.

R. N. Buck—For the year 1906, month of January, 17,500 cu. ft., $20.13; February, 16,600 cu. ft., $19.09; March, 18,600 cu. ft., $21.39; April, 15,700 cu. ft., $18.06; May, 20,200 cu. ft., $22.22; June, 20,000 cu. ft., $22.00; July, 16,500 cu. ft., $18.98; August, 21,300 cu. ft., $23.43; September, 18,800 cu. ft., $21.62; October, 18,300 cu. ft. $21.05; November, 16,600 cu. ft., $19.19; December, cu. ft., $16.90.

Armstrong & McClenahan—For the year 1906, month of January, 23,500 cu. ft., $25.85; February, 22,400 cu. ft., $24.64; March, 21,100 cu. ft., $23.21; April, 18,700 cu. ft., $21.51; May, 14,900 cu. ft., $16.10; June, 12,000 cu. ft., $13.80; July, 10,200 cu. ft. $11.73; August, 11,200 cu. ft., $12.88; September, 14,000 cu. ft. $12.88; October, 19,800 cu. ft., $11.27; November, 33,200 cu. ft. $36.50; December, 25,000 cu. ft., $27.50.

Star Laundry—For the year 1906, month of January, 13,800 cu. ft., $15.87; February, 11,700 cu. ft., $13.50; March, 14,500 cu. ft., $16.68; April, 15,800 cu. ft., $18.17; May, 16,700 cu. ft.,
954 $19.21; June, 16,300 cu. ft., $18.75; July, 16,700 cu. ft. $19.21; August, 16,400 cu. ft., $18.86; September, 13,900 cu. ft., $15.99; October, 17,400 cu. ft., $20.01; November, 16,600 cu. ft., $19.07; December, 17,400 cu. ft., $20.01.

Gazette Co.—For the year 1906, month of January, 15,900 cu. ft., $19.29; February, 13,900 cu. ft., $15.99; March, 18,500 cu. ft. $21.28; April, 20,800 cu. ft., $22.88; May, 16,800 cu. ft., $19.32; June, 15,700 cu. ft., $18.06; July, 14,000 cu. ft., $16.10; August, 15,700 cu. ft. $18.06; September, 13,300 cu. ft., $15.30; October, 16,400 cu. ft., $18.86; November, 16,500 cu. ft., $18.98; December, 16,500 cu. ft., $18.98.

STATE OF IOWA,
Linn County, ss:

I, A. T. Averill, being first duly sworn on oath say that I am president and one of the principal stockholders of the Cedar Rapids Gas Light Company, and as such officer am acquainted with the conduct of the business of said company; that the above and foregoing answers to interrogatories and each of them are made by me from examination and knowledge of the books, records and condition of said company and the several answers and the facts therein stated are within my knowledge, and I know them to be true, except as to matters therein stated on opinion, and belief and as to those matters affiant believes them to be true, and further affiant saith not.

A. T. AVERILL.

Subscribed and sworn to by the said A. T. Averill, this 9th day of August 1907, before me.

[SEAL.]

GRACE F. YONKERS,
Notary Public in and for Linn Co.

Correct appellant's abstract by striking therefrom Exhibit
955 No. 26 as shown on pages 203-206 inclusive, the same being the plaintiff's record book, and substitute in lieu thereof the following:

956 *Report for the Month of January—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,808,000	1,644,400	163,600	9.04	1,402,600	5.04	393,500	63	5.4	20	782
1898.....	2,500,000	2,095,000	407,000	16.2	2,282,500	4.96	255,910	50	5.3	20	1087
1899.....	2,973,920	2,502,900	471,020	15.8	2,604,000	4.76	396,000	49	5.7	20	1327
1900.....	3,426,820	3,137,300	289,520	8.4	2,790,500	5.00	678,210	48	4.6	20	1501
1901.....	3,745,900	3,617,100	128,800	3.5	3,240,500	4.86	482,710	51	5.2	20	1641
1902.....	4,611,390	4,376,800	234,590	5.1	3,071,500	4.86	1,533,500	39	4.7	20	1882
1903.....	5,635,930	5,054,200	581,700	10.3	4,812,000	4.75	883,790	46	5.5	20	2109
1904.....	6,038,900	5,379,700	659,200	10.9	4,007,500	4.17	1,746,700	..	....	..	2321
1905.....	6,929,890	6,019,100	910,790	13.2	7,000,000	5.04	.....	..	....	20	2900
1906.....	9,228,340	8,199,500	1,028,840	11.1	8,344,000	4.90	1,011,000	54	4.6	18	3309
		M453,100	.....	....	.....	....	.....	..	....	..	224
1907.....	11,141,300	9,111,800	1,576,700	16.5	8,135,000	4.87	3,040,000	35	3.8	18	3738
		M308,200	.....	....	.....	....	.....	..	....	..	379
1908.....	12,017,540	10,219,400	1,189,940	9.9	5,483,900	5.00	6,526,500	39	4.1	18.6	4064
1909											
1910											

937 *Report for the Month of February—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,602,570	1,458,100	144,470	9.01	1,270,000	5.04	342,910	63	5.1	20	787
1898.....	2,094,150	1,871,500	222,650	10.6	2,016,000	4.92	47,790	46	5.3	20	1090
1899.....	3,316,430	2,143,900	1,166,530	35.2	2,867,000	....	435,500	..	....	20	1346
1900.....	2,897,500	2,606,000	291,500	10.	2,467,500	4.93	430,000	53	4.6	20	1503
1901.....	3,169,390	2,900,400	268,990	8.5	2,899,500	4.84	284,500	53	5.0	20	1641
1902.....	4,169,370	3,881,200	228,170	5.6	3,266,500	4.76	826,000	40	4.7	20	1882
1903.....	4,845,000	4,585,300	259,700	5.3	4,473,500	4.84	371,500	49	5.8	20	2109
1904.....	5,938,670	5,017,300	921,370	15.6	4,001,000	4.70	2,120,500	41	4.9	20	2321
1905.....	5,850,000	5,210,500	639,500	10.9	5,874,000	4.99	.....	..	....	..	2610
1906.....	7,727,240	7,052,300	674,940	8.7	6,796,000	4.92	862,000	50	4.2	18	3309
		M386,400	.....	....	.....	....	.....	..	....	..	274
1907.....	9,701,720	7,289,900	2,026,320	20.9	7,244,000	4.83	2,424,200	37	3.9	18	3742
		M576,000	.....	....	.....	....	.....	..	....	..	379
1908.....	10,395,300	8,796,300	1,052,100	10.1	5,103,100	5.10	5,311,160	41	4.4	18.5	4064
1909											
1910											

958 *Report for the Month of March—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897	1,736,900	1,555,700	181,200	10.43	1,350,000	5.00	400,500	69	5.1	20	789
1898	2,155,800	1,955,000	202,800	9.31	2,166,500	4.98	.....	..	...	20	1109
1899	3,493,350	2,385,000	1,108,350	31.7	3,321,500	4.95	124,500	57	6.0	20	1353
1900	3,059,900	2,700,000	359,900	11.7	2,777,000	4.97	270,000	57	4.4	20	1496
1901	3,428,040	2,982,000	446,040	13.0	3,229,000	4.85	212,790	54	5.2	20	1650
1902	4,338,450	4,001,900	336,550	7.8	4,361,000	4.85	29,750	58	5.0	20	1905
1903	5,105,050	4,593,200	511,850	10.0	5,011,500	4.85	118,500	58	5.6	20	2119
1904	6,116,950	5,329,800	787,150	12.8	4,498,000	4.66	1,640,200	40	4.5	20	2339
1905	6,190,280	5,640,300	558,980	9.0	6,226,000	....	.....	..	...	..	2620
1906	8,487,900	7,500,100	987,800	11.6	7,351,500	4.90	1,104,500	44	3.8	18	3309
		M379,800	.....	....	.....	....	.....	..	...	..	275
1907	10,337,860	8,403,800	1,554,260	15.0	7,685,000	4.62	2,871,040	35	3.7	18	3758
		M541,500	.....	....	.....	....	.....	..	...	..	382
1908	10,848,620	8,839,500	1,467,620	13.5	5,332,800	4.91	5,512,610	41	4.2	18½	4085
1909											
1910											

959 *Report for the Month of April—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897	1,653,500	1,514,400	139,100	8.41	1,357,000	5.03	295,500	63	5.0	20	827
1898	2,039,680	1,837,700	201,980	9.9	2,017,000	4.73	.....	..	...	20	1154
1899	2,971,560	2,217,300	754,260	25.4	2,920,000	4.95	93,500	51	5.5	20	1378
1900	2,889,630	2,666,800	222,830	7.7	2,905,500	5.11	.....	..	...	20	1516
1901	3,234,300	2,845,100	389,200	12.0	3,103,000	4.82	122,910	51	5.0	20	1682
1902	3,872,760	3,596,000	276,760	7.1	3,315,000	4.88	553,500	48	4.8	20	1929
1903	4,940,340	4,782,100	158,240	3.2	4,888,000	4.92	41,000	62	7.1	20	2149
1904	5,620,570	5,090,200	539,370	9.6	4,111,000	4.38	1,396,000	38	4.2	20	2393
1905	5,965,580	5,055,100	910,480	15.4	5,894,000	5.11	.....	..	...	..	2641
1906	8,136,960	6,850,800	1,286,160	15.8	6,352,500	4.90	1,815,080	40	3.9	18	3319
		M423,500	.....	....	.....	....	.....	..	...	..	275
1907	10,246,690	8,957,600	1,289,090	12.6	10,183,500	4.97	.....	..	...	..	3771
		599,800	.....	....	.....	....	.....	..	...	..	395
1908	10,128,220	8,859,600	968,820	6.6	4,824,000	4.64	5,277,500	42	4.4	18.87	4145
1909											
1910											

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,743,000	1,527,200	215,800	12.8	1,429,500	5.02	306,000	46	5.2	20	876
1898.....	2,175,800	1,914,700	261,100	12.	2,152,000	4.91	.....	..	...	20	1196
1899.....	2,814,020	2,479,700	334,320	11.9	2,826,500	5.00	.....	..	...	20	1415
1900.....	2,951,000	2,748,900	202,100	6.8	2,934,000	5.07	.....	..	...	20	1536
1901.....	3,369,300	3,068,900	300,460	8.9	3,205,000	4.89	122,500	55	5.1	20	1727
1902.....	4,002,380	3,585,550	416,880	10.4	3,384,000	4.80	602,500	45	4.7	20	1989
1903.....	5,015,070	4,408,600	606,470	12.1	4,971,000	4.78	55,000	70	5.3	20	2201
1904.....	5,565,690	4,715,800	849,890	13.6	4,445,500	4.70	1,297,000	40	4.2	20	2446
1905.....	6,419,820	5,573,000	846,820	13.2	6,458,000	5.09	.....	..	...	..	2791
1906.....	7,922,320	7,168,800	753,520	9.5	4,929,600	4.74	3,211,040	37	3.9	18	3410
		M493,000	.....	....	.....	....	.....	..	...	..	331
1907.....	10,832,470	9,713,500	1,118,970	10.3	10,370,500	4.36	272,500	48	3.5	15.5	3836
		M587,000	.....	....	.....	....	.....	..	...	..	415
1908.....	10,502,760	8,969,900	1,550,860	14.7	4,584,200	4.69	5,947,530	42	4.1	18.25	4205
1909											
1910											

961 *Report for the Month of June—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,760,840	1,544,100	216,740	12.2	1,749,500	5.04	.....	..	...	20	927
1898.....	2,013,350	1,829,000	184,350	9.1	597,500	4.84	1,470,000	42	4.6	20	1217
1899.....	2,671,770	2,307,700	364,070	13.3	2,666,000	4.92	.....	..	...	22	1425
1900.....	2,936,430	2,534,900	401,530	13.7	2,570,000	4.86	383,410	49	5.0	20	1549
1901.....	3,192,680	2,786,700	405,980	12.7	3,151,500	4.92	51,000	55	5.0	20	1744
1902.....	3,991,810	3,456,100	535,710	13.02	326,000	4.81	694,210	42	4.6	20	2009
1903.....	4,859,050	4,315,600	543,450	11.3	4,864,000	4.87	31,700	64	6.4	20	2244
1904.....	5,344,720	4,926,600	4,181,120	7.9	3,530,950	4.67	1,754,000	36	4.0	20	2488
1905.....	6,396,000	5,601,000	936,770	14.4	6,396,000	5.04	.....	..	...	..	2913
1906.....	7,503,920	6,825,900	678,020	9.0	4,830,680	4.67	2,720,000	35	4.0	18	3461
		M716,700	.....	....	.....	....	.....	..	...	..	353
1907.....	9,555,130	8,730,200	824,900	8.6	6,302,830	4.80	3,254,630	37	4.8	16.3	3887
		M675,900	.....	....	.....	....	.....	..	...	..	415
1908.....	10,275,800	10,192,900	82,900	.8	4,823,878	5.14	5,510,000	41	4.0	18.45	4265
1909											
1910											

962 *Report for the Month of July—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,818,820	1,535,200	283,620	15.6	1,841,500	5.00	.....	..	...	20	955
1898.....	1,827,110	1,683,000	178,810	9.8	.....	....	1,813,560	38	4.5	20	1237
1899.....	2,562,140	2,223,000	339,140	13.2	2,450,500	4.92	98,310	58	6.0	20	1419
1900.....	2,894,340	2,663,000	231,340	8.0	2,180,000	4.80	703,300	44	4.8	20	1573
1901.....	3,175,630	2,377,400	798,230	*	3,147,620	4.96	.....	..	...	20	1770
1902.....	4,028,140	3,613,600	414,540	10.3	3,305,000	4.86	768,500	41	4.7	20	2029
1903.....	4,822,490	4,210,800	611,690	12.7	4,783,000	4.93	12,000	..	...	20	2264
1904.....	5,444,440	4,738,600	705,840	12.9	3,630,000	4.66	171,900	34	3.8	20	2512
1905.....	7,133,470	5,763,200	1,370,270	19.0	7,312,000	5.07	.....	..	...	..	3009
1906.....	7,574,180	6,551,700	1,022,480	13.5	5,150,000	4.70	2,400,000	36	4.2	18	3521
		M588,800	.....	6.0	.....	....	.....	..	...	..	391
1907.....	8,547,840	8,133,500	414,340	4.8	4,658,500	4.40	3,969,500	37	5.2	..	3934
		M697,500	.....	....	.....	....	.....	..	...	..	415
1908.....	9,868,000	9,427,400	440,600	4.5	4,750,300	5.09	4,894,200	40	4.0	18.62	4295
1909											
1910											

* Commenced reading meters on the 15th.

963 *Report for the Month of August—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	1,925,090	1,689,000	236,090	12.3	1,882,000	5.00	.....	..	...	20	989
1898.....	2,095,160	1,990,900	104,260	4.9	496,300	4.87	1,612,200	40	4.9	20	1257
1899.....	2,539,310	2,307,300	232,010	9.1	2,112,300	4.95	403,000	48	5.4	20	1433
1900.....	2,904,890	2,661,400	243,490	8.4	1,335,500	4.79	1,566,000	39	4.5	20	1585
1901.....	3,307,270	2,737,200	570,070	17.0	3,288,000	4.90	.....	..	...	20	1800
1902.....	4,200,950	3,737,200	463,750	11.0	3,348,500	4.85	812,290	39	4.7	20	2046
1903.....	4,968,380	4,234,800	733,580	14.7	4,697,500	4.75	284,290	52	5.2	20	2276
1904.....	5,783,450	5,082,400	701,050	12.3	3,985,000	4.66	1,782,500	33	3.7	20	2519
1905.....	7,455,340	6,402,000	1,053,340	14.0	7,157,000	5.04	.....	..	...	..	3143
		M125,400	.....	....	.....	....	.....	..	...	..	....
1906.....	8,044,080	7,071,600	847,080	10.6	4,625,000	4.45	3,377,000	32	3.6	18	3596
		M638,800	.....	....	.....	....	.....	..	...	....	375
1907.....	9,034,900	8,459,800	575,100	6.5	4,167,500	4.72	4,832,500	33.6	5¼	16.51	3969
		M758,200	.....	....	.....	....	.....	..	...	....	430
1908.....	10,430,280	9,536,300	893,980	8.6	4,612,000	5.27	5,989,440	39	3.85	17.42	4313
1909											
1910											

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	2,026,740	1,822,200	204,540	10.	2,035,000	5.00	.....	..	...	20	1010
1898.....	2,579,660	2,434,800	144,860	5.6	1,781,100	4.95	793,310	43	5.1	20	1279
1899.....	2,822,100	2,569,200	252,900	8.9	2,450,490	4.81	360,000	48	5.1	20	1452
1900.....	3,214,720	2,919,300	295,420	9.2	2,067,000	4.77	1,123,680	40	4.7	20	1600
1901.....	3,481,170	3,307,000	174,170	5.	3,042,000	4.96	440,500	47	5.0	20	1830
1902.....	4,960,960	4,187,100	773,860	15.	4,785,000	4.98	1,705,000	44	5.0	20	2065
1903.....	5,628,660	5,189,200	439,460	7.8	4,574,820	4.77	1,079,000	40	4.6	20	2311
1904.....	6,514,680	5,780,000	734,680	11.2	6,369,500	4.77	178,400	38	4.1	20	2571
1905.....	8,418,800	7,159,200	1,223,600	14.5	7,393,000	5.00	1,183,490	39	5.2	20	3244
		M225,800	.....	....	.....	....	.....	..	...	..	M156
1906.....	8,966,000	7,765,000	974,600	10.8	5,251,100	4.50	3,891,600	31	3.9	18	3680
		M648,300	.....	....	5,249,000	....	.....	..	...	..	381
1907.....	10,080,780	8,289,600	1,142,880	11.3	2,249,220	4.69	7,791,720	32	4.8	19.23	4025
1908											
1909											
1910											

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	2,343,300	2,095,800	247,500	10.5	2,186,500	5.03	184,190	53	5.7	20	1032
1898.....	2,875,000	2,711,000	164,000	5.7	2,070,500	4.93	808,280	45	5.3	20	1320
1899.....	3,170,430	2,900,000	270,430	8.5	2,700,000	4.95	479,500	50	5.0	20	1454
1900.....	3,585,070	3,400,000	185,070	5.2	2,906,500	4.84	689,470	45	4.8	20	1615
1901.....	4,042,230	3,384,000	657,630	16.2	3,249,000	4.92	795,710	43	4.6	20	1854
1902.....	5,009,700	4,751,200	258,500	5.2	3,601,500	4.86	1,390,100	39	5.0	20	2081
1903.....	6,246,200	5,659,100	587,100	9.4	4,633,500	4.75	1,879,000	40	5.0	20	2330
1904.....	6,743,410	6,087,200	656,210	9.8	6,020,000	4.90	773,000	37	4.0	20	2600
1905.....	9,017,210	8,221,600	795,610	8.9	7,890,000	4.93	1,096,000	39	4.4	20	3300
		M314,200	.....	....	.....	....	.....	..	...	..	M225
1906.....	10,349,000	9,047,600	987,200	10.5	7,029,920	4.84	3,307,820	33	3.9	18	3750
											M388
1907.....	.....	.....	.....	....	.....	....	.....	..	...	..	4050
1908											
1909											
1910											

966 *Report for the Month of November—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	2,368,130	2,159,100	209,020	8.82	2,160,000	4.95	208,210	45	5.5	20	1065
1898.....	2,906,880	2,680,400	226,480	7.8	2,844,000	4.77	57,800	..	...	20	1331
1899.....	3,168,555	2,981,000	187,550	5.9	2,522,500	4.98	643,920	47	5.2	20	1481
1900.....	3,496,480	3,227,800	268,680	7.7	2,934,000	4.89	579,500	49	5.1	20	1635
1901.....	4,223,610	4,124,700	98,910	2.3	3,159,500	4.90	105,050	42	4.7	20	1865
1902.....	5,002,140	4,534,300	467,840	9.3	3,231,000	4.83	1,762,000	37	4.8	20	2089
1903.....	6,047,800	5,380,000	666,960	11.0	4,340,500	4.70	1,807,000	40	5.2	20	2336
										20	2600
1904.....	6,888,760	6,213,800	674,960	9.8	6,898,000	4.99	.....	..	...		
1905.....	8,955,420	7,550,100	1,405,320	15.7	7,744,000	4.95	1,293,000	44	4.6	20	3308
		M413,600	.....	....	.....	....	.....	..	...	..	270
1906.....	10,220,000	9,007,400	799,000	7.8	7,115,500	4.85	3,116,360	35	4.0	18	3732
											M381
1907.....	.....	.....	.....	....	.....	....	.....	..	...	..	4053
1908											
1909											
1910											

967 *Report of the Month of December—Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	C. P.	Meters.
1897.....	2,642,220	2,354,000	288,220	10.9	2,311,000	5.00	267,000	43	5.5	20	1085
1898.....	3,087,040	2,800,000	287,040	9.3	2,906,000	4.85	476,500	49	5.7	20	1319
1899.....	3,324,920	2,983,000	341,920	10.3	2,504,500	4.87	799,870	45	5.0	20	1497
1900.....	3,843,710	3,414,700	429,010	11.1	3,141,500	4.84	711,200	48	5.1	20	1638
1901.....	4,723,430	4,399,500	323,930	6.8	3,221,500	4.86	1,511,000	41	4.9	20	1871
1902.....	6,036,880	5,806,900	189,480	3.1	5,045,000	4.87	995,080	45	5.4	20	2109
1903.....	6,661,330	6,467,100	194,230	2.9	4,556,000	4.60	2,160,850	42	5.4	20	2336
										20	2600
1904.....	7,422,390	6,844,000	578,390	7.8	7,346,000	5.01	.....	..	...		
1905.....	9,854,290	9,551,200	303,090	3.0	8,212,000	4.91	1,531,000	45	4.7	20	3309
		M304,000	.....	....	.....	....	.....	..	...	..	274
1906.....	11,112,720	9,264,800	1,453,720	13.2	7,682,500	4.66	4,003,500	33	3.9	18	3738
		M394,200	.....	....	.....	....	.....	..	...	..	M379
1907.....	12,304,109	10,467,700	1,249,000	10.1	5,147,260	4.78	7,163,650	38	4.1	18.73	4053
1908											
1909											
1910											

968 *Yearly Report of the Cedar Rapids Gas Light Company.*

Year.	Send Out.	Meter Sales.	Leakage.	%	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	Meters in use Dec. 31.	Met'rs Gain.
1897.....	23,429,110	20,899,200	2,529,910	11.0	20,974,600	5.01	2,454,500	54	5.3	1085	303
1898.....	28,349,630	25,768,300	2,581,330	9.2	21,029,300	4.88	7,320,330	44	7.1	1319	234
1899.....	35,762,650	30,000,000	5,762,650	19.0	31,945,280	4.91	3,817,360	50	5.4	1497	178
1900.....	38,100,490	34,680,100	3,420,390	9.0	31,009,000	4.90	7,091,490	47	4.7	1638	141
1901.....	43,093,010	38,530,600	4,562,410	10.6	37,996,120	4.89	5,096,890	49	5.0	1871	233
1902.....	54,164,930	49,527,800	4,637,130	8.1	43,974,000	4.88	10,150,930	42	4.9	2109	238
1903.....	64,757,270	58,880,900	5,876,370	9.0	56,585,320	4.80	8,673,630	42	5.2	2336	227
1904.....	*73,430,630	65,205,400	8,225,230	11.2	59,101,600	4.72	14,229,000	39	4.4	2600	264
1905.....	*86,723,100	77,782,300	*8,940,800	10.3	83,556,000	5.02	5,073,490	42	4.7	3309	709
		M1,473,200	.....	....	.....	....	.....	..	...	....	274
1906.....*100,764,000		92,306,100	*8,457,900	8.5	74,858,300	4.70	30,819,900	36	3.9	3738	429
1907											
1908											
1909											
1910											

*Original figures have been erased and others substituted in their place.

969 Correct Exhibit No. 31 on page 213, being the trial balance for the month of August, 1905, by striking out the following: "New purifying room $3,715.69," and insert in lieu thereof the following: "New purifying room $6,715.69."

Further correct Exhibit No. 31 by inserting the words and figures after "Repair" and before the figures 1940.90 at the middle of page 217 of appellant's abstract, the following: "Charge Pur. $5,627.00," written in lead pencil.

Also correct said Exhibit No. 31 by inserting after the words "Cedar Rapids National Bank," and directly under the figures $291.43, at the middle of page 218 of appellant's abstract, the figures "$653.66."

Exhibits 35, 40, 41, 42, and 43 are Consumers' Ledgers of the Cedar Rapids Gas Light Company.

The plaintiff then produced eight loose leaf ledgers, marked Exhibits 35, 36, 37, 38, 39, 41, and 43 and a loose leaf transfer ledger marked Exhibit 40, and offered the same in evidence. Each of the said ledgers contains about 700 sheets, which can be removed. The following are two of the accounts taken from Exhibit 42:

Cedar Rapids Gas Light Co., Cedar Rapids, Iowa.

Deposit, $5.00. A Avenue. No. 1711. Name, H. M. Haegenson. Date, Nov. 26, 1904. Meters, Am. 5 It., 3431.

Date, 1907.	Index.	Cubic feet hundreds.	Am't.	Date of payment.	Disc't.	Amount paid.
February 22	329	..	....	.....	...	....
March 25	357	28	3.50	April 10	.28	3.22
April 23	385	28	3.50	May 9	.28	3.22
May 27	410	25	3.13	June 10	.25	2.88
July 2	422	12	1.50	July 10	.12	1.38

970 *Cedar Rapids Gas Light Co., Cedar Rapids, Iowa.*

D Avenue. No. 1600. Guarantee. B. A. Allen. Name, F. N. Allen. Date set, March 17, 1907. Meters, M.C.D., 5, 4149.

Date, 1907.	Index.	Cubic feet hundreds.	Am't.	Date of payment.	Disc't.	Amount paid.
March 26	45	11	1.38	March 30	.11	1.27
April 24	62	17	2.13	May 4	.17	1.96
May 28	87	25	3.13	June 5	.25	2.88

Correct Exhibit 61, as shown at pages 728 and 729 of appellant's abstract, by striking the same from the said abstract and inserting in lieu thereof the following:

	1901.	1902.	1903.	1904.	1905.	1906.
Gas	$5,735.00	6,508.50	7,850.00	8,498.50	9,827.00	5,580.00
Coke	3,188.71	1,691.00	4,555.00	3,950.00	7,920.00	2,406.00
Fitting	3,280.44	2,454.36	2,520.22	3,103.00	2,423.13	1,652.36
Tar	134.00	499.25	324.00	469.00	166.75	353.80
Accts. rec.	121.32	10.95	82.86	17.13	47.74	924.84
Cash	16.64	1,070.39	221.03	610.63	320.80	400.67
Gas coal	.....	.....	1,064.52	.....	.....	.....
Gas oil	.....	.....	.....	314.49	.....	.....
	$12,476.11	12,234.45	16,617.63	17,022.75	18,705.42	11,327.67
Due cred.	2,814.71	2,037.87	9,263.11	4,031.68	12,540.75	8,067.52
	$15,290.82	14,272.32	25,880.71	21,054.43	31,246.17	19,396.19

Strike from Exhibit 33 the following, contained on page 230 of appellant's abstract, "The committee to have Articles of Incorporation executed and acknowledged, submit the following as the subscription of the original incorporators," and substitute in lieu thereof the following:

"OTTUMWA, IOWA, *January* 15, 1872.

"To the Incorporators and Stockholders of the Cedar Rapids Gas Light Co.

"The committee to have Articles of Incorporation executed and acknowledged, submit the accompanying Articles of Incorporation to the said company, signed as follows:

971 Name.	No. of shares.	Amount.
Amasa E. Swift	500	$50,000.00
William H. Whitta	500	50,000.00
George F. Wright	500	50,000.00"

Strike from Exhibit 33, Abstract of Page 23, of said Exhibit 33, as shown on page 230 of appellant's abstract, and substitute in lieu thereof the following:
on page 230 of appellant's abstract and substitute in lieu thereof the following:

"OTTUMWA, *January* 15, 1872.

"To the Board of Directors, Cedar Rapids Gas Light Company.

"GENTLEMEN: For the consideration of $5,000.00 we propose to sell, assign, and transfer to the Cedar Rapids Gas Light Co., a certain franchise and charter granted and ordained by the City Council of the city of Cedar Rapids, on the 17th day of November, 1871, to W. H. Whitta, and his associates, acting under the name and title of W. H. Whitta & Co., which is found in Ordinance 112 of the said city." (Here follows a copy of the Ordinance.)

Which proposition was accepted. Page 18 to 22.

Directors E. A. Swift and George F. Wright were appointed a committee to confer with W. H. Whitta & Co. with relation to the conveyance to the Cedar Rapids Gas Light Co. the franchise and charter named in their proposition, and said committee submitted the following report:

972 "JANUARY 15, 1872.

"To the Board of Directors of the Cedar Rapids Gas Light Co.

GENTLEMEN: After conferring with W. H. Whitta & Co., about the sale and transfer to this company of the charter or franchise to light the City of Cedar Rapids with gas, and with Director W. H. Whitta, we have agreed among ourselves as the three incorporators and sole stockholders of the said company, to personally purchase from the said W. H. Whitta & Co. the said charter and franchise and present the same to the company, without cost or charge to the said company, save a credit of 20 per cent. on our stock therein,

which shall be in full payment for the same, and we do hereby, on behalf of ourselves and Director W. H. Whitta, present the Cedar Rapids Gas Light Co. a Deed of Conveyance from the said W. H. Whitta & Co. for said charter and franchise, with a consideration therein expressed of $5,000.00." (Here follows assignment of franchise. Pages 23 and 24 of said Exhibit 33.)

Further correct Exhibit 33 as shown at page 231 of appellant's abstract, by striking therefrom the following: "Warranty Deed. "In consideration of $1,150.00, we, James C. May and wife, Nancy, hereby sell and convey unto the Cedar Rapids Gas Light Company, Lots 1 and 2, Fractional Block 9, Original Town of Cedar Rapids. (Deed contains statutory warranty.) Signed, February 23, 1872," and substitute in lieu thereof the following:

973 CEDAR RAPIDS, IOWA, *July*, 1872.

"To the Board of Directors of the Cedar Rapids Gas Light Co.:

"The undersigned committee to select and purchase a suitable ground upon which to locate gas works in Cedar Rapids, Iowa, for the said Company, submit the following:

That I have purchased for the said company, from James C. May, Lots 1 and 2 in fractional block 9 of the City of Cedar Rapids, Linn County, Iowa, paying therefor the sum of $1,150.00, and consider the ground cheap at that, and well located, and suitable for the works of the company. That I took the deed to the said real estate in my own name and your said deed therefor filed for record on the 3rd day of June, 1872, having been executed on the 23rd day of February, 1872, which deed I return herewith, as a part of the report.

Warranty Deed from James C. May and wife, to A. E. Swift (here follows copy of warranty deed from James C. May and Nancy C. May to A. E. Swift of lots 1 and 2 in fractional block 9, in consideration of $1,150.00."

W. H. Whitta offered the following resolution: "That the report of A. E. Swift, committee, in relation to the selection and purchase by him for the company of lots 1 and 2, fractional block 9, for $1,150.00, and the purchase thereof by him, be and the same is hereby adopted and the secretary is directed to have the said report and deed accompanying, spread upon the records of the company; and that the secretary as committee for that purpose procure a deed to the said real estate from the said Swift to the Cedar Rapids
974 Gas Light Co., and have the same recorded in the office of the Recorder. And that the said Swift be allowed therefor the sum of $50.00, out of the first money coming into the treasury. On motion carried."

Page 38 of Exhibit 33, W. H. Whitta offered the following resolution: "Whereas, it has been resolved by the Cedar Rapids Gas Light Co. to construct gas works in the said city, and to that end, grounds have been selected and purchased in the said city by the said company, now, for the purpose of building and putting in successful

operation such gas works and the necessary appurtenances thereto, and to provide for extensions of the mains and supply of gas to the said city and its inhabitants, be it resolved: First, that the Cedar Rapids Gas Light Co. shall issue 50 bonds of $500.00 each, payable ten years from date, at the office of Allen Stephens & Co., in the City of New York, with interest at the rate of 10 per cent. per annum, payable semi-annually, said bonds to have semi-annual coupons attached, etc.

"Second. That the president of the company is authorized to sign and execute said bonds, and affix the seal and to execute to Lyman J. Gage of the City of Chicago, State of Illinois, Trustee, a mortgage to secure the same on the gas works of the said company, with all the estate, interest, right, and franchise of the said company therein together with all the real estate belonging to the said company, situated in Cedar Rapids as well as the privileges granted to W. H. Whitta & Co., being a certain ordinance granted to said W. H. Whitta & Co. by the City Council of the City of Cedar Rapids." (Said resolution contains other provisions with reference to the said mortgage.) Resolution was unanimously adopted.

975 Director George F. Wright offered the following resolution, which was unanimously adopted:

"That as soon as the bonds and mortgage are ready for execution, that the president, secretary and treasurer of the company proceed at once to execute them, the bonds and mortgage to be countersigned by Lyman Gage, Trustee, and when so executed, the bonds to be delivered to the president for sale, at a price not less than 90c. on the dollar of the face thereof, and that the proceeds arising from the sale to be paid to the treasurer of the company, etc. (Page- 39 and 40 of Exhibit 33.)

"Cedar Rapids Gas Light Co., Cedar Rapids, Iowa, January 7, 1873.

Stockholders' Annual Meeting.

Present—A. E. Swift, Stockholder, 500 shares; W. H. Whitta, Stockholder, 500 shares; George F. Wright, Stockholder, 500 shares.

Minutes of the last meeting approved.

Stockholder George F. Wright offered the following resolution: Resolved, that the capital stock of this company, for a consideration to the stockholders, be redistributed to N. O. Swift, Esq., enough from each of the present stockholders' stock wherein to make him an equal stockholder with each of them in the said company, and that the said stock, when so divided, stand and be owned as follows:

A. E. Swift, 375	$37,500.00
W. H. Whitta, 375	37,500.00
George F. Wright, 375	37,500.00
N. O. Swift, 375	37,500.00

and that the said N. O. Swift have the same credit of 20 per
976 cent. paid up thereon as other stockholders have on theirs, for considerations duly received therefor. On motion the resolution was unanimously adopted.

On motion, A. E. Swift, George F. Wright, W. H. Whitta and N. O. Swift were elected directors of the said company for the ensuing year. Resolution was adopted approving and confirming the action of the Board of Directors in issuing $25,000.00 first mortgage bonds and the mortgage securing the payment of the same."

"Office of Cedar Rapids Gas Light Co.

January 7th, 3 o'clock p. m.

Meeting of the Board of Directors.

Present—W. H. Whitta, George F. Wright, A. E. Swift, and N. O. Swift. On motion A. E. Swift was elected president, W. H. Whitta, vice president, and N. O. Swift, secretary and treasurer.

Director Wright offered the following resolution, which was unanimously adopted. The president of the board, in whose hands the first mortgage bonds of the company are now held, is hereby authorized to pay any and all debts of the company with the same, and to make such sale of them as he may be able to do at not less than 85 cents on the dollar of the face thereof. The secretary as committee to procure deed from A. E. Swift for the lots upon which the works of the company are situated, made his report by returning to the board the deed to the said lots, executed by Amasa E. Swift, dated October 2, 1872, and reporting a consideration of $1,200.00. This report was adopted."

977 "Cedar Rapids, Iowa.

Office of Cedar Rapids Gas Light Co.

November 4, 1874.

Directors' Meeting.

Present—A. E. Swift, W. H. Whitta, George F. Wright, N. O. Swift. George F. Wright reported to the board that he had sold his stock in the company, 375 shares, upon which 20 per cent. had been paid, to A. E. Swift, and tendered his resignation as director. Upon motion his resignation was accepted. A. E. Swift reported that he had purchased the stock of George F. Wright to the company, and that the books of the company should show that his stock of the company should stand for 750 shares. N. O. Swift offered the following resolution, which was unanimously adopted. That the stock of A. E. Swift in the Cedar Rapids Gas Light Co. be and the books of the company so show 750 shares. (Page 58 of Exhibit 33.)

Director W. H. Whitta offered the following resolution, which was unanimously adopted. That as all the directors and stockholders of the Cedar Rapids Gas Light Co. have bargained and sold to H. G. Higley, W. W. Higley and M. A. Higley an undivided one-half of the Cedar Rapids Gas Light Co., and the stock thereof, that we do now as officers and directors of the said company resign our positions therein. On motion the meeting adjourned."

"Cedar Rapids, Iowa.

Office of Cedar Rapids Gas Light Co., November 5, 1874.

Stockholders' Meeting.

Present—H. G. Higley, A. E. Swift, W. W. Higley, N. O.
978 Swift, W. H. Whitta, and M. A. Higley. Chairman stated the object was the election of directors. On motion H. G. Higley, W. H. Whitta, M. A. Higley, N. O. Swift, W. W. Higley, and A. E. Swift were elected directors of the said corporation.

Same Date and Place.

Directors' Meeting.

Present—A. E. Swift, H. G. Higley, M. A. Higley, W. H. Whitta, N. O. Swift, and W. W. Higley. H. G. Higley, was elected president, A. E. Swift, vice president, W. W. Higley, treasurer, and M. A. Higley, secretary."

"Stockholders' Meeting, Cedar Rapids Gas Light Co.

February 9, 1875.

Present—H. G. Higley, W. W. Higley, A. T. Averill, and John Thomas. W. W. Higley offered the following resolution:

Resolved, that as A. E. Swift, W. H. Whitta, and N. O. Swift, having sold out their entire stock of 750 shares in this company to A. T. Averill, Homer Bishop, W. H. Thomas and John Thomas, and that their certificates of stock have been duly signed over to the said Averill, Bishop, Thomas and Thomas, and new stock issued instead, that the said stock shall now stand in the books of the company as follows, to-wit:

A. T. Averill	500 shares.
Homer Bishop	150 shares.
W. H. Thomas	50 shares.
John Thomas	50 shares.

On motion it was unanimously adopted.

979 Stockholders, on motion, proceeded to elect A. T. Averill, Homer Bishop and John Thomas, Directors, to take the place of A. E. Swift, W. H. Whitta and N. O. Swift, resigned."

"Directors' Meeting, February 9, 1875.

W. W. Higley offered the following resolution:

That, whereas this company having taken up the second mortgage bonds and coupons of this company, to-wit: $15,000.00; it is resolved that these bonds and coupons shall be cancelled, and that A. T. Averill, vice president of this company, be empowered and instructed to take the above mentioned bonds and coupons to H. H. Nash of Chicago, Illinois, trustee of this company, and have them duly cancelled and the deed of trust taken up and duly satisfied; and the secretary is instructed to prepare a copy of these resolutions to accompany the bonds. Motion was unanimously adopted."

"Directors' Meeting, April 7, 1875.

A. T. Averill, vice president, committee appointed to have second mortgage bonds of the company cancelled and the deed of trust satisfied, reports that he presented the bonds and coupons to W. H. Whitta, trustee, who cancelled the same and satisfied the mortgage of record. On motion the report of the committee was adopted."

Further correct Exhibit No. 33 by striking from appellant's abstract, before the second paragraph contained on page 233, and substitute in lieu thereof the following from the record of directors:

"At the commencement of the above seven months, or May
980 1, 1875, the company had about $275.00 on hand, out of which there was back rents and other unpaid bills to the amount of about $100.00 to be paid. There was also the April 1, 1875, coupons to the amount of $1,250.00, 30 days past due and unpaid. Besides this load of debt the monthly receipts roll of gas bills had become greatly reduced on account of the short nights of the spring and summer months, many customers having shut off their gas entirely. Besides the works were all out of repair, mains leaking all over town. The outlook on May 1, 1875, was not flattering to say the least. During the first two months, May and June, by strict economy and hard work the treasury was able to pay the running expenses of the works, satisfy all claims and bills coming due, and take up and cancel all the April 1, 1875, coupons and make a small commencement towards placing the works in repair, and during the balance of the seven months the works had been overhauled, new retorts purchased, and any leaks in the mains hunted out and stopped, and new mains extensions to the amount of $1,700.00 had been made. Besides relaying the Park Avenue bridge, a very important improvement, and doing some $1,200.00 to $1,500.00 of work which was placed on the books to the credit of the company, but not collected.

In addition to this work, many improvements have been made. It has been demonstrated that wood can be used in the manufacture of gas and that tar instead of a loss can be utilized for fuel. Also

quite a large addition has been made to the list of consumers, with flattering prospects of a larger addition next summer.

A favorable contract has been made with the city for new street lamps and the receipts from the city have been more than
981 treble. Also a start has been made to work on the assessment for taxes with fair prospects for a more favorable assessment next years.

(Signed) JOHN THOMAS,
Secretary."

M. A. Higley, treasurer of the company, reported that he had received from April 17, 1875, to January 1, 1876, $11,105.00. That he had expended for the company $10,564.26, leaving a balance in his hands, belonging to the company, of $541.62.

Further correct said Exhibit by adding the following at the top of page 234 of appellant's abstract, and directly over the words, "Balance Sheet, January 2, 1877."

"To the Stockholders of the Cedar Rapids Gas Light Company.

GENTLEMEN: I herewith submit my report as secretary of the Cedar Rapids Gas Light Co."

And at the bottom of the said balance sheet, taken on said page 234, add the following:

"All of which is respectfully submitted. M. A. Higley, Secretary."

JANUARY 2, 1875.

"To the Stockholders of the Cedar Rapids Gas Light Company.

GENTLEMEN: I herewith submit my annual report as treasurer of the Cedar Rapids Gas Light Co.:

Cash in City National Bank, December 1, 1875		$29.12
982 Cash received and deposited in the City National Bank, from December 1, 1875, to December 31, 1876		17,998.43
Amount disbursed by check	$18,027.10	
Amount in bank at this date	.45	
		$18,027.55

Respectfully submitted,

M. A. HIGLEY,
Treasurer."

Director Thomas offered the following resolution:

"That the president (A. T. Averill) be paid $25.00 per month salary for his special services to the gas company."

Also a further resolution was adopted to the effect that the treasurer be instructed that after a dividend of one per cent. has been

paid, the balance of the funds be used in taking up outstanding bonds.

The directors' meeting adjourned.

Further correct the said Exhibit by striking from the bottom of page 234 of appellant's abstract, the following:

"Profit and Loss Account, December 31, 1877," and substitute in lieu thereof the following:

"Stockholders' Meeting, January 4, 1878.

CEDAR RAPIDS, IOWA, *January* 1, 1878.

To the Stockholders of the Cedar Rapids Gas Light Company.

983 GENTLEMEN: I herewith submit my report as secretary of the Cedar Rapids Gas Light Co. for the year 1877, inclusive:

Total amount of money received	$15,571.28
Amount paid treasurer	15,542.62
Amount now in my hands	28.66

The following is the balance sheet made up at the close of business December 31, 1877:

Balance Sheet.

Cedar Rapids Gas Light Co.	$150,000.00	
Capital stock account		$150,000.00
Bond account		23,000.00
Stock account		11,703.66
Gas works account	36,414.42	
Office fixtures account	12.44	
Gas account		6,421.22
Cope account		743.24
Coal tar account		209.50
Lime account		3.78
Fitting account		9.74
Expense account	3,220.29	
Dividend account	1,500.00	
Bills receivable	1,191.78	
Bills payable		589.05
Unpaid gas bills	174.05	
Profit and loss account	138.55	
Cash	28.66	
	$192,680.19	$192,680.19

The following is the Profit and Loss Account, after closing the books:

984 *Profit and Loss Account.*

Stock account	$2,487.54	
Expense account	3,220.29	
Dividend account	1,500.00	
Office fixtures account	12.44	
Unpaid gas bills	138.55	
Cash	28.66	
Gas account		$6,421.22
Coke account		743.24
Coal tar account		209.50
Lime account		3.78
Fitting account		9.74
	$7,387.48	$7,387.48

Showing a net profit for 1877, of $4,028.64.

Respectfully submitted,

JOHN THOMAS, *Secretary.*"

Further correct Exhibit 33 by striking from the top of page 235 of appellant's abstract, the following:

"Resolved, that the price of gas be reduced to $4.00 per thousand cubic feet, with 5 per cent. discount if paid on or before the 10th of each month; that the price of setting meters be $3.00 and a dividend of 1 per cent. on the capital stock declared," and substitute in lieu thereof the following resolutions, which were unanimously carried: "That the price of gas be reduced to $4.00 per thousand cubic feet and if the bills be paid on or before the 10th of each month, discounts be allowed as follows:

Bills for consumption of less than 1,000 cubic feet 5 per cent., and bills for consumption of over 1,000 cubic feet 10 per cent. That the executive committee be authorized to make special rates with large consumers. That the price for setting small meters be reduced to about $3.00. That the treasurer be authorized to declare
985 and make a dividend of one per cent. on the capital stock of the company as soon after taking up the three bonds as there shall be sufficient funds in the treasury."

Further correct Exhibit 33 by inserting directly over the words on Page 90, "Balance Sheet for January 1, 1880," the following:

"That the treasurer be authorized to declare a dividend of one per cent. of the capital stock as soon as funds are in the treasury."

Further correct Exhibit 33 by adding near the top of page 236 to the sentence, "Resolution that a dividend of one per cent. be declared as soon as the funds are in the treasury carried," the following: "A resolution that the treasurer be authorized to take up five of the company's bonds as soon as there are sufficient funds in the treasury carried."

Further correct Exhibit 33 by striking from the top of page 237 the following:

"Directors' Meeting. Resolved that the company issue 100 bonds

of $500.00 each payable ten years from date. Carried." And substitute in lieu thereof the following:

"Directors' meeting held on the 27th of March, 1883, for the purpose of paying off $12,500.00 of bonds heretofore issued by this company and for the purpose of purchasing real estate and rebuilding and enlarging the works, and extending the mains for a greater supply of gas, be it resolved that the Cedar Rapids Gas Light Co. issue 100 bonds for $500.00 each, payable ten years after date at the option of the said Cedar Rapids Gas Light Co., after April
986 1, 1888, with interest at the rate of 7 per cent. per annum, payable semi-annually. Carried."

Further correct Exhibit 33 by striking the following from appellant's abstract, near the bottom of page 237: "Page 102, Balance Sheet, January 1, 1904." and insert in lieu thereof, "Page 102, Balance Sheet, January 1, 1894."

"Pages 117 to 121 contain the franchises of 1896 and — lowing: Further correct Exhibit 33 by striking out the fol — acceptances; same are set out as Exhibit "B" of petition" (Abs. 238 bottom), and insert in lieu thereof the following:

"Pages 117 to 121 contain the ordinance No. 437 passed by the city council the 26th day of May, 1896, a copy of which is set out as Exhibit "B" of plaintiff's petition, also the acceptance of the said ordinance by the Cedar Rapids Gas Light Co., which acceptance is in words and figures following:

Acceptance by the Cedar Rapids Gas Light Company of Ordinance 437 of the City of Cedar Rapids, Linn County, Iowa.

To the City of Cedar Rapids, Linn County, Iowa:

The Cedar Rapids Gas Light Co., an Iowa corporation, hereby accepts the conditions of Ordinance No. 437, the same being an ordinance granting a renewal of franchise, and providing for the furnishing of gas to the City of Cedar Rapids, Iowa, and the inhabitants thereof, passed by the City Council of the City of Cedar
987 Rapids, Linn County, Iowa, on the 26th day of May, 1896, and said acceptance is filed with the Recorder of the said city in pursuance with the requirements of said ordinance, and in conformity with such ordinance, being a renewal of Ordinance No. 112, passed November 17, 1871.

In Witness Whereof, the Cedar Rapids Gas Light Co. caused this acceptance to be signed by its president, and attested by its secretary, together with its corporate seal hereto affixed, at the City of Cedar Rapids, Linn County, Iowa, this 2nd day of June, A. D. 1896.

CEDAR RAPIDS GAS LIGHT COMPANY.
By A. T. AVERILL, *President.*

Attest:
[SEAL.] GLENN M. AVERILL, *Secretary.*

Further correct said Exhibit 33 by striking from page 238 of the abstract, the following:

"Page 115. Directors' Meeting January 15, 1905. On motion a dividend of two per cent. was declared payable to stockholders of record, December 14, 1904," and substitute in lieu therof the following:

"Page 115. Directors' Meeting, January 15, 1895. On motion a dividend of 2 per cent. was declared payable to stockholders of record, December 14, 1894. Carried."

Also strike from said page 238 the following:

"Page 116. Directors' Meeting, January 7, 1906. Moved and carried that a dividend of 2 per cent. be declared to stockholders of record January 1, 1905," and substitute in lieu thereof the following:

"Page 116. Directors' Meeting, January 7, 1896. Moved
988 and carried that a dividend of 2 per cent. be declared to stockholders of record, December 31, 1895."

Also strike from said page 238 the following:

"Page 122. Directors' Meeting, July 1, 1906," and substitute in lieu thereof the following:

"Page 122. Directors' Meeting, July 1, 1896."

Also strike from the top of page 239 the following:

"On motion a dividend of 3 per cent. was declared to be paid to the stockholders of record, December 31, 1907, out of the earnings of that year," and substitute in lieu thereof the following:

"On motion a dividend of 3 per cent. was declared to be paid the stockholders of record, December 31, 1897, out of the earnings of that year."

Also add at "Exhibit G," under words "Testimony of Glenn M. Averill concluded," the following:

As a part of the cross examination of Glenn M. Averill, the defendants offered in evidence Exhibit G.

"EXHIBIT G."

"CEDAR RAPIDS, IOWA, August 22, 1901.

Glenn M. Averill, City, to Marcus M. Hall, Contractor and Builder:

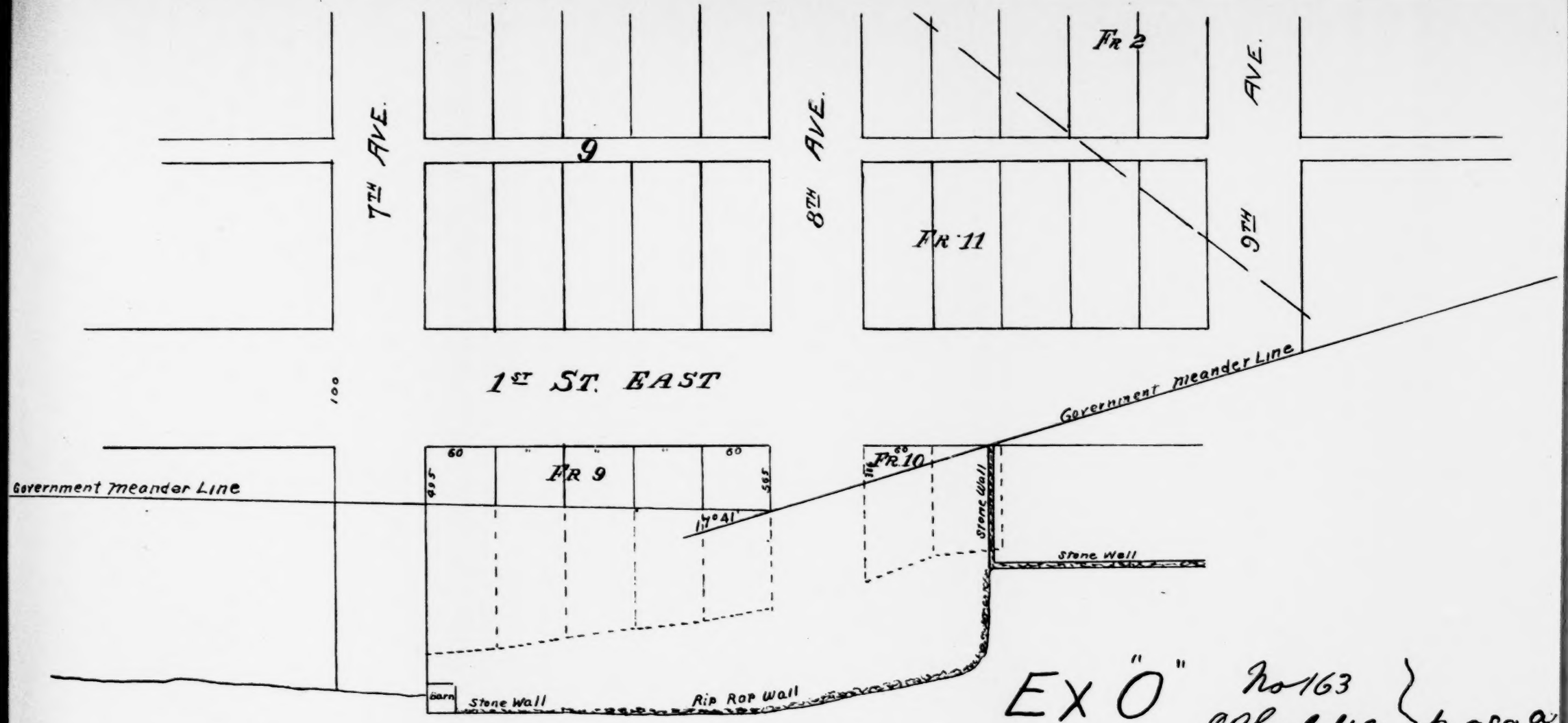
July 21—To 1 piece astragal		$ 1.00
1 oak threshold		.38
1 mill work		285.58
31 hours' labor		8.53
Total		$295.49
Plus 10 per cent		29.54
989 Total		$325.03

Paid September 23, 1901.

Written across the bill,

"Glenn M. Averill $ 10.90

Repair 314.10"



EX "O"

No 163
C.R. Gas Light Co
v.
City of C.R. Wal.
} p 989 a

PLAT OF
PART OF CITY OF CEDAR RAPIDS
SHOWING MEANDER LINE ON EAST SIDE OF CEDAR RIVER
FROM 7TH AVENUE TO 9TH AVENUE
Scale 1" = 80'

O x J

CITY ENGINEER'S OFFICE
CEDAR RAPIDS IOWA
DEC 9, 1907

Addition. After the offer of Exhibit H on page 429 of appellant's abstract, add the following:

"Defendant's offer in evidence Exhibit H, being the inaugural address of A. H. Connor, made on the 12th day of March, 1906," So far as the said inaugural address is material the same is as follows:

"Light and Heat Rates.

The regulation of rates for commercial heating, lighting and power should receive early attention. It should be approached in a spirit of fairness and conciliation and without passion or prejudice, the end sought being to obtain for Cedar Rapids rates at least as low as those in other cities under the same conditions."

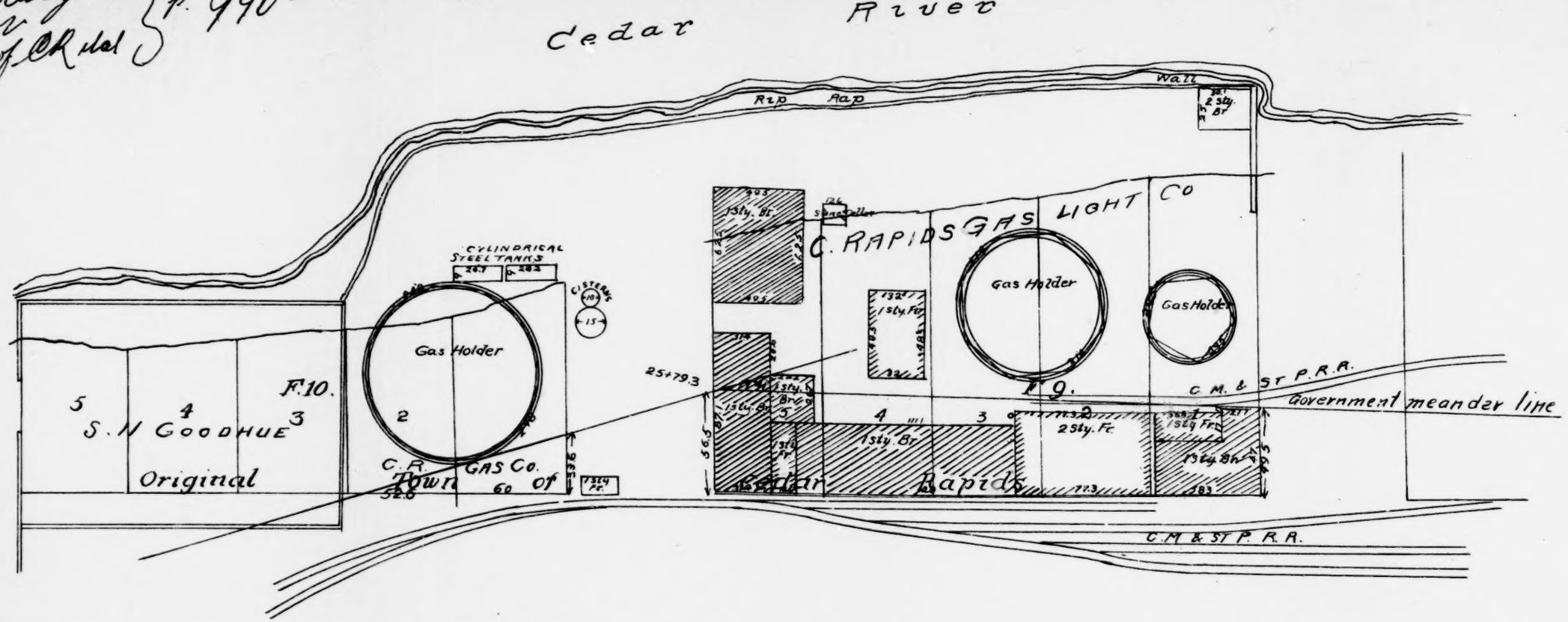
"EXHIBIT O."

Exhibit O is a plat prepared by T. R. Warriner, City Engineer of the City of Cedar Rapids, showing the meander line in fractional blocks 9 and 10, City of Cedar Rapids.

Said plat, which was offered in evidence as shown at page 467 of appellant's abstract, is set out herein.

(Here follows blue-print marked p. 989*a*.)

No 163.
C.R. Gaslight Co
v
City of C.R. et al
} p. 990a



EX. A2

Eighth Avenue

Seventh Avenue

PLAT OF PROPERTY

CEDAR RAPIDS GAS LIGHT CO

NOTE = ORIGINAL PLAT IN RED

City Engineers Office
Cedar Rapids Iowa
Feby. 19. 1904

"Exhibit F 2."

Exhibit F-2 offered in evidence by the defendant as shown in the middle of page 465 of appellant's abstract, is Chapter 37 of the Revised Ordinances of the City of Cedar Rapids, Iowa, of 1906. Said ordinance provides that when any avenue, street or alley in the city shall be ordered paved, or otherwise permanently improved, it shall be the duty for all owners of property abutting on said street, avenue or alley to make permanent and substantial connections of gas, water, sewer and steam heating mains, and underground electric conduits, if any, along such street, avenue, or alley. And the council may by resolution order such connections made.

Section 2 of said ordinance provides the location of such pipes and the manner in which they shall be laid, and that they shall be laid under the specifications of the City Engineer.

Section 3 of said ordinance provides that where property owners fail to make such connections within ten days from the time ordered so to do, the City Council shall order the same to be made.

Section 4 of the said ordinance provides for the advertising of bids for making such connections, etc.

Sections 5, 6 and 7 provide for the letting of the contract,
991 the construction of the said connections, and the assessment of the cost thereof to the abutting property.

Section 8 provides that whenever any highway, street, avenue, or alley had been ordered paved and the property owners owning the property abutting or lying along such street, alley, or avenue, have been notified by the city to connect their property with water, steam, or gas mains by laying down pipes to within the curb line in front of or along the property, it shall be unlawful for any person so notified, who has refused to comply with the requirements of said notice, to enter upon said street, highway, avenue, or alley after the same has been paved, and make any excavation in the paving thereof, for the purpose of connecting their property with such gas or water mains, for a term of four years after such paving is laid, and not then unless by a special resolution of the City Council.

Section 9 of the said ordinance makes the violation thereof a misdemeanor.

Correct appellant's abstract by striking therefrom pages 519 to 554, the same purporting to contain Exhibit K-2, being the audit of the books of the Cedar Rapids Gas Light Co., by Marwick, Mitchell & Co., and substitute in lieu thereof the following Exhibit K-2:

"Exhibit K-2."

Index to Report.

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992	Profit, dividend, depreciation and surplus, 1902-1906	3
	Investment in Marion not stated in affidavit	4

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Exhibit "A"—Cost of manufacturing and distributing gas for each of the five years ended December 31, 1902, 1903, 1904, 1905, and 1906.

Exhibit "B"—Comparative Balance Sheet, as per company's books as at December 31, 1906, 1905, 1904, 1903, and 1902.

Schedule "1"—Particulars of investment by the Cedar Rapids Gas Light Company as detailed in Affidavit by President, dated August 9, 1907.

Schedule "2"—Yearly Report of Operations from 1897 to 1906.

Schedule "3"—Summary of Daily Record, for year ended December 31, 1906.

Schedule "4"—Comparative Statement of Meter Sales by Months, in cubic feet.

Schedule "5"—Comparative Statement of Charges for Gas Coal used from January 1, 1905, to July 31, 1907.

994 Schedule "6"—Comparative Statement of Average Sales per Meter in cubic feet, from January 1, 1905, to July 31, 1907.

Schedule "7"—Residuals.

Schedule "8"—Condensed Analysis of Repairs and Renewals Account for the years 1905 and 1906.

Schedule "9"—Condensed Analysis of Fittings Account, for the years 1905 and 1906.

Schedule "10"—Bonds Authorized and Issued.

Schedule "11"—Bills payable.

Schedule "12"—Officials and Employés—General Office, Distribution, Shop and Works—October 19,1907.

995 In the District Court of Iowa within and for Linn County, November Term, A. D. 1907.

In Equity.

THE CEDAR RAPIDS GAS LIGHT COMPANY, Plaintiff,

vs.

THE CITY OF CEDAR RAPIDS, GEO. S. LIGHTNER, as Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, W. E. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen, with the Mayor Constituting the City Council of said City of Cedar Rapids, and H. S. Keffer, Recorder, Defendants.

Report of Marwick, Mitchell & Co., Chartered Accountants, Employed by the City of Cedar Rapids.

NEW YORK, *November* 9, 1907.

To James W. Good, City Attorney, Solicitor for the Defendant, the City of Cedar Rapids; J. W. Jamison, Esq., and H. E. Spangler, Esq., of Counsel.

DEAR SIRS: In accordance with your instructions we have made an investigation of the accounts of the Cedar Rapids Gas Light Company with a view to ascertaining the accuracy of the affidavits submitted by them

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in their action against the City of Cedar Rapids, George S. Lightner as Mayor of said City, and others, presently pending before the District Court of Iowa, within and for Linn county; and also of determining the actual cost of manufacturing and distributing gas in the City of Cedar Rapids. We now submit our report thereon together with the Exhibits and Schedules as set forth in the foregoing Index.

Conclusions.

As a result of our examination we have concluded that:

1. The affidavit submitted on August 9, 1907, by A. T. Averill, president of the plaintiff company, contains very material errors and does not record the correct answers to several of the interrogatories contained therein.

2. The books of the plaintiff company do not properly record its various transactions.

3. The cost, exclusive of any charge for interest or for the use of the plant, of manufacturing and distributing gas to the consumers of the City of Cedar Rapids for the period from January 1, 1902, to December 31, 1906, was as follows:

	Manufacturing	Distributing including Cost leakage	Total
Year 1902	c35.19	21.61	57.00
Year 1903	38.33	21.02	59.35
Year 1904	42.53	21.22	63.75
Year 1905	38.68	28.77	67.45
Year 1906	41.11	27.01	68.12
Average	c39.53	24.51	64.04

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4. Gas can be supplied to the consumers of the City of Cedar Rapids at a price of 90c. per thousand cubic feet and, at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies.

Explanatory of Conclusions.

1. Answering Question No. 3 contained in his affidavit of August 9, 1907, Mr. A. T. Averill states that, beyond a dividend of 8 per cent. upon the amount of the capital stock of the company, "There were no other dividends or profits received by the Cedar Rapids Gas Light Company from its investment in said plant during said period."

The following statement records the actual profits for the five years as shown by the books. Each year, it will be observed, the company, in addition to paying a dividend of 8 per cent. upon its capital stock, set apart considerable sums in respect of the depreciation of the plant as well as large amounts of surplus.

	Profit.	Dividend.	Divisible depreciation.	Surplus.	Per cent of surplus on capital.
Year 1902.....	$32,121.87	12,000.00	10,000.00	10,121.87	6.75
Year 1903.....	36,962.14	12,000.00	20,000.00	4,962.14	3.31
Year 1904.....	38,171.64	12,000.00	12,500.00	13,671.64	9.11
Year 1905.....	35,437.49	12,000.00	10,000.00	13,437.49	8.96
Year 1906.....	31,610.64	12,000.00	13,000.00	6,610.64	4.41
Total...	$174,303.78	60,000.00	65,500.00	48,803.78	32.54

It is therefore evident that the reply does not fully answer the question. We might explain that this depreciation does not appear to be

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calculated upon any scientific basis. It is an arbitrary amount and has no relation to the capital invested in the plant. During the five years immediately preceding 1902 only $7,500.00, and that in the year 1899, was charged for depreciation.

In reply to question No. 6, Mr. Averill states the amount invested during 1906 in new buildings, mains, etc., as $21,439.51. This does not include an investment of $35,974.60 in establishing a business in the City or Village of Marion, about five miles distant from Cedar Rapids. This investment appears to consist chiefly of a high pressure main between the cities. We might here state, although we will subsequently deal with it in detail, that the gas sold in Marion, 1,473,200 cubic feet, is not included in the sales specified by Mr. Averill in answering Question No. 11.

In question No. 10 the company was requested to submit the total amount of gas made for each of the years 1902 to 1906. The figures stated in reply were in respect of the gas sent out of the works to the consumers and do not agree with the records of the company. The differences in the first three years are immaterial while those of the last two are considerable.

	Sent Out of Works to Consumer.		
	Affidavit.	Records.	Difference.
Year 1902 cu. ft.....	54,164,900	54,164,930	30
Year 1903 cu. ft.....	64,757,200	64,757,270	70
Year 1904 cu. ft.....	73,430,600	73,430,630	30
Year 1905 cu. ft.....	86,723,100	88,736,840	2,013,740
Year 1906 cu. ft.....	100,764,000	105,272,660	4,508,660

In the year 1905 *the records exceed the affidavit by* 2,013,740 *cubic feet, while in* 1906 *the difference is* $4,508.-.

In the year 1905 the records exceed the affidavit by 2,013,740 cubic

999 (Page 5 of Hall's Report.)

feet, while in 1906 the difference is 4,508,660 cubic feet. The 1905 difference is unexplained but it must be pointed out that, by accepting the monthly totals in the record books, the figures as submitted by plaintiff, cannot be obtained. We now submit the monthly consumption, or, to express it more clearly, the amount of gas used in the works and sent out from there to supply the consumer.

	Year.		Increase.	
	1905.	1906.	Cubic feet.	Per cent.
January	6,929,860	9,228,340	2,298,480	33.168
February	5,850,000	7,727,240	1,877,240	32.089
March	6,199,280	8,487,900	2,288,620	36.917
April	5,965,580	8,136,860	2,171,380	36.398
May	6,419,820	7,922,320	1,502,500	23.404
June	6,537,770	7,503,920	966,150	14.778
July	7,133,470	7,574,180	440,710	6.178
August	7,455,340	8,044,080	588,740	7.895
September	8,418,800	8,966,000	547,200	6.501
October	9,017,210	10,349,000	1,331,790	14.769
November	8,955,420	10,220,000	1,264,580	14.121
December	9,854,290	11,112,720	1,258,430	12.770
Total	88,736,840	107,272,660	16,535,820	18.634

That the Plaintiff's affidavit cannot be accepted as conclusive is obvious. An examination of the private record book, containing the monthly and yearly summaries of the daily record book, reveals the fact that in the yearly summaries of the years 1905 and 1906, the figures originally entered were subsequently erased and those as included in the affidavit substituted. Upon being questioned regarding these discrepancies the officials of the Plaintiff Company stated that they were in respect of variations on account of adjustments for temperature. That this explanation is not altogether correct is ascertained by an examin-

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ation of the daily record book for the summer months of the year 1906 when, before determining the monthly total, the adjustment for temperature is provided for. The following figures are taken from this book:

		cu. ft.
Coal and Water Gas Made		106,616,320
Adjustments for Temperature	1,156,240	
Unexplained Deductions	33,340	
		1,189,580
		105,426,740
Excess Gas in Holder December 31, over January 1		154,080
Sent out to Consumers—Year 1906		105,272,660

The records of the year 1905 do not contain particulars of adjustments in respect of variations of temperature but on the same basis as the year 1906 it could not amount to 2,013,740 cubic feet, which is the difference between the aggregate of the twelve months' consumption, 88,736,840 cubic feet, and that recorded in the affidavit 86,733,100 cubic feet.

From the manner in which the books were kept, we found it impossible to verify the quantity of gas sold by the company. Accepting the above mentioned record books as correct, in this respect, we desire to point out that the sales for 1906, including the quantity used at the works, were reported as 92,306,100 cubic feet while they actually were 93,779,300. The difference, 1,473,200 cubic feet, represented the sales to the consumers of Marion. These sales have been altogether ignored by the company in submitting their statements.

While dealing with the question of the sales for the year 1906 we might point out certain inconsistencies in Interrogatory No. 11 of

1001 (Page 7 of Hall's Report.)

the affidavit of Mr. A. T. Averill. From the sales mentioned there fails to be deducted 974,000 cubic feet used in the works. The difference, 91,331,400 cubic feet, was sold to consumers and the amount realized from its sale was $95,290.94 or an average of $1.04 per thousand cubic feet. That this average is too low, is shown by the following figures prepared from Mr. Averill's affidavit and the books of the company:

	Quantity, cubic feet.	Value.	Average per M c. f.
Gas supplied at less than regular prices	3,842,400	$4,189.52	$1.09
Gas supplied on stove contracts	7,004,600	6,566.82	.93
Gas supplied at regular rates	80,484,400	92,557.06	1.15
	91,331,400	$103,313.40	$1.13

From this statement it will be observed that, for the 91,331,400 cubic feet sold to consumers, $103,313.40 or an average of $1.13 per thousand cubic feet, should have been realized. This is $8,022.46, or nine cents per thousand cubic feet more than stated in the affidavit. In explanation of these figures, we have to submit the following particulars:

(*a*) Practically all the gas supplied at less than regular prices is included by Mr. A. T. Averill in Answer No. 40 of his affidavit.

(*b*) The gas supplied on stove contracts has been extracted from the Consumers' Ledgers and calculated at an average of 75 per cent. of the regular selling price of $1.25 per thousand cubic feet. This average price was that given by the officials of the company, their statement being that all gas supplied under stove contracts was at an average of

1002 (Page 8 of Hall's Report.)

75 per cent. of the usual selling price of $1.25. That this amount is approximately correct is demonstrated by an examination of the accounts with the stove contractors. The first contract, with the Eclipse Stove Company, was entered into in the year 1905. The supplying of gas under this contract was not completed until 1906, when another contract, this time with J. R. Meader, was made. Gas, under this latter contract, was supplied during both the years 1906 and 1907. Allowing that the gas sold in 1905 and not supplied until 1906 would approximately equal that sold in 1906 but not supplied until 1907, one-half of the total amounts so received would be on account of the year 1906. The amounts received were as follows:

Year 1905, Eclipse Stove Company	$6,922.80
Year 1906, J. R. Meader	5,120.50
Total on account of stove contracts	$12,043.30

One-half, $6,021.65, would represent the gas supplied during 1906 and is practical confirmation of the above figure of $6,566.82 taken from the Consumers' Ledger.

(*c*) We have calculated the remainder of the gas supplied at the net rate of $1.15 per thousand cubic feet.

(*d*) No account has been taken of forfeited discounts or of gas sold at more than the usual rate of $1.15. We have not been able to determine the amount of the former but answer to Interrogatory No. 31 of the affidavit states that $471.04, or $262.77 in excess of $1.15 per thousand cubic feet, was received for "readiness to serve" privileges and gas supplied thereunder.

1003 (Page 9 of Hall's Report.)

(*e*) The amount of gas sold to employés at $1.00 per thousand cubic feet can-ot be ascertained.

The average price received for the sales of the year 1905 was within a fraction of $1.13 per thousand cubic feet and is further support for our contention that the average, as calculated from the plaintiff's affidavit, is wrong.

We might further mention that the president of the company has stated that the average price they expect to realize from the sale of gas is $1.13 per thousand cubic feet.

This difference, viz.: $8,022.46, might be partly explained by the fact that the balance of gas on hand and due by consumers was at the close of the year $4,237.00 less than that at the commencement. The balance at the former date was $5,590.00, while at the latter it was $9,827.00.

Loss by bad debts might also explain a small part of the difference. Upon inquiry we were informed that no record of these is kept.

Interrogatory No. 12 of the affidavit deals with the question of gas

unaccounted for during the period from 1902 to 1906. During the first three years we find that the figures, as submitted by the plaintiff, are in accord with the books. In the subsequent years the differences are as follows:

	Gas unaccounted for.		
	Affidavit.	Records.	Difference.
Year 1905—per cent.....	10.3	12.34	2.04
Year 1906—per cent.....	8.5	10.92	2.42

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Clearly set forth, therefore, the amount of gas sent out, the meter sales and the leakage for the five years, are as follows:

		Meter Sales.			Leakage.	
Year.	Sent out.	Cedar Rapids.	Marion.	Used at works.	Am't	Per cent.
1902..	54,164,930	49,527,800	.....	.....	4,637,130	8.56
1903..	64,757,270	58,880,900	.....	.....	5,876,370	9.07
1904..	73,430,630	65,205,400	.....	.....	8,225,230	11.20
1905..	88,736,840	76,957,300	.....	825,000	10,954,540	12.34
1906..	105,272,660	91,331,400	1,473,200	974,700	11,493,360	10.92

The amount of gas used at the works during the years 1902 to 1904 can-ot be ascertained, while for the year 1905 the amount for several months was estimated.

In submitting, in answer to Question No. 13, the rate for which gas was supplied to the consumer, the plaintiff does not specify that sold under contract with the Eclipse Stove Company and J. R. Meader. These parties entered into a contract with the company whereby they installed gas stoves and had gas supplied at a rate about 25 per cent. less than the current price.

The reply to Interrogatory No. 15, dealing with the quantity of gas sold and the amount received therefrom, does not specify the sales to Marion, either in quantity or price.

Interrogatory No. 16 has reference to the cost of manufacturing gas. The figures submitted are not in accordance with fact. From the cost of manufacture should be deducted the returns from the sale of residuals. Further, in stating the cost an arbitrary sum has been added in respect of depreciation and amounts for interest on mortgage bonds and borrowed money. These latter charges do not enter into the

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cost of manufacturing gas although they must be taken into consideration when determining the return upon the capital invested.

While not correctly prepared, the figures for the year 1906 are, so far as they go, as set forth in the books. The difference in the years preceding 1905 are negligible. Those for 1905, however, are $5,627.00 in excess of the book figures, as follows:

Profit and Loss Account:

Retort house	$44,437.57
Cupola	1,828.93
Purifying	1,454.67
Repairs	1,940.90
	$49,662.07
Affidavit	55,289.07
Difference	$5,627.00

A thorough investigation of the books does not explain this difference.

An examination of the inventory appended to the affidavit sets forth that the expense of making service connections from the main to the curb is included at a value of $15,289.00. The president of the plaintiff company, replying to Interrogatory No. 16, states that this expense is a part of that of operating the business and is a charge against the income derived from the sale of gas. We are informed, and our information is confirmed by an examination of the books, that the expense of the connection from the curb to the premises is paid for by the consumer.

The inventory also includes $29,384.00, representing the value of 3,811 meters set and ready for use. The purchase price of a meter, apart from the expense of setting, is less than that set forth. The

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expense of setting, like that of making connections, has been charged as an operating expense.

So far as we can ascertain, the investment of the company in the town of Marion is not included in this inventory, with the exception of 23,760 feet 3 in. H. P. pipe, valued at $5,483.00.

2. The books of the Cedar Rapids Gas Light Company do not set forth clearly and comprehensively, nor do they record fully, the various transactions of the company. The accounts are not kept on a proper revenue and expenditure basis, but simply record the cash transactions of the company. Instead of recording the liabilities for materials and supplies, when purchased, no entry is made in the books until they are paid for. No particulars are kept on the general books of the amount of gas charged to Consumers' Gas Accounts. This is entered in daily totals only when the accounts are paid. The details of these totals are not kept. The charge is only made on a Consumers' Ledger. This is kept separate and distinct from the general books and bears no relation to them whatever. It is, therefore, impossible to determine whether all the gas supplied has been duly accounted for. We might state that we were informed that the practice has been to destroy all leaves belonging to this ledger whenever the account is fully paid. That this is not so is shown by the fact that, in several instances when the

account has been closed and reopened after a lapse of a few years, the old leaves have been reinserted in the current ledger.

It is impossible, owing to the want of system, to trace all the vouchers in respect of expenditures. Numerous payments are made by draft but the account paid is seldom, if ever, specified.

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Sufficient detail of the various accounts, more especially those connected with the making of service connections and the setting of meters, etc., is not given.

The transactions con-ected with the commencement of business in the town of Marion are not fully entered on the books. Gas is supplied but no record of the cash received is kept.

From accounts kept as these are, it is impossible to prepare statements showing, clearly, the information necessary for the economical and intelligent operation of the business. No statistics of the cost of manufacturing and distributing gas are prepared.

3. We have prepared, and submit in Exhibit "A," particulars of the cost, exclusive of any charge for interest or for the use of plant, of manufacturing and distributing gas in the City of Cedar Rapids for the five years from January 1, 1902, to December 31, 1906. The following is an abstract:

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Cost of Manufacturing and Distributing Gas.

Year—	1902.	1903.	1904.	1905.	1906.
Cost of manufacture	$16,355.60	$21,728.34	$27,524.24	$29,857.67	$38,500.59
Depreciation on plant	2,708.47	3,259.55	3,666.48	4,431.71	5,330.82
Station Cost	$19,064.07	$24,987.89	$31,190.72	$34,289.38	$43,831.41
General repairs	1,915.27	1,460.91	1,437.49	1,940.90	3,258.38
Fittings account	.....	972.80	39.60	6,758.98	5,943.83
Total repairs	$1,631.28	$2,433.71	$1,477.09	$8,699.88	$9,202.21
Taxes	1,716.00	1,690.67	1,848.32	2,026.40	1,965.36
Officers' salaries, office expenses, etc	5,820.27	6,015.79	7,013.93	6,865.87	7,878.20
Total distributing expense	$9,167.55	$10,140.17	$10,339.34	$17,592.16	$19,045.77
Total cost exclusive of interest	$28,231.62	$35,128.06	$41,530.06	$51,881.53	$62,877.18

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For the purpose of more clearly setting forth these costs we have reduced them to the basis of "per thousand cubic feet." To do so we found it necessary to ascertain the actual quantity of gas manufactured and distributed during the period under review. The quantities in cubic feet are as follows:

	1902.	1903.	1904.	1905.	1906.
Gas in holders January 1st, cubic feet	71,920	66,830	500,570	399,540	289,770
Total gas made during year	54,169,480	65,191,010	73,329,600	88,634,210	106,616,320
Total gas to be accounted for	54,241,400	65,257,840	73,830,170	89,033,750	106,906,090
Sold to consumers	49,527,800	58,880,900	65,205,400	76,957,300	*92,804,600
Gas in holders on December 31st	66,830	500,570	399,540	289,770	443,850
Total gas to be accounted for	49,594,630	59,381,470	65,504,940	77,247,070	93,248,450
Leakage including gas used at works	4,646,770	5,876,370	8,225,230	11,786,680	13,657,640

* Includes sales to Marion.

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As stated previously, we have taken the actual quantity of gas manufactured irrespective of any adjustments for temperature and accordingly the leakage shown above differs from that recorded by company by the amount of these *da*justments. For the first three years we cannot state, definitely, whether the gas used at the works is included as a sale or a leakage. The quantity, however, would be so small as to make practically no alteration in the figures we are about to submit. During the years 1905 and 1906 we have included it with the leakage.

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The costs, calculated on the "thousand cubic feet" basis, are as follows:

Year—	1902.	1903.	1904.	1905.	1906.	Av.
Cost of manufacture	c30.19	33.33	37.53	33.68	36.11	34.53
Depreciation on plant	5.00	5.00	5.00	5.00	5.00	5.00
Station cost	35.19	38.33	42.53	38.68	41.11	39.53
Distribution:						
General repairs	3.86	2.48	2.21	2.52	3.57	2.93
Fittings account	.57*	1.65	.06	8.78	6.51	3.92
Total repairs	3.29	4.13	2.27	11.30	10.08	6.85
Taxes	3.47	2.87	2.83	2.64	2.16	2.70
Officers' salaries, office expenses, etc	11.75	10.22	10.76	8.92	8.62	9.83
Leakage	3.20	3.80	5.36	5.91	6.15	5.13
Total distr'b'tg exp'nse	21.81	21.02	21.22	28.77	27.01	24.51
Total cost exclusive of interest	c57.00	59.37	63.75	67.45	68.12	64.04

[* In red ink in copy.]

An examination of these figures is interesting and we will now criticise them in detail.

Cost of Manufacture. The cost of manufacture varies considerably during the period under review, as follows:

	Amount.	Per M c. f. manufactured.
Year 1902	$16,355.60	30.19 cents
Year 1903	21,728.34	33.33 cents
Year 1904	27,524.24	37.53 cents
Year 1905	29,857.67	33.68 cents
Year 1906	38,500.59	36.11 cents
Average		34.53 cents

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The increase in cost in 1906, as compared with 1905, is partly explained by a rise in the price of coal. During the first half of the year 1906 this cost was $4.15 per ton, while, during the second half, it was $4.45. This price was increased to $4.55 in July, 1907. Were we able to apportion the general repair account, the cost of manufacture might be somewhat more.

Depreciation of plant. We have set aside, in respect of the depreciation of the property at the works, but excluding mains, service connections, meters, etc., a sum equivalent to five cents per thousand cubic feet manufactured. The amounts, so provided, are as follows:

Year 1902	$ 2,708.47
Year 1903	3,259.55
Year 1904	3,666.48
Year 1905	4,431.71
Year 1906	5,330.82
Total	$19,397.03

As already stated, the amounts set aside by the company for depreciation appear to have been determined in an arbitrary manner and without regard to actual requirements. They were as follows:

Year 1902	$10,000.00
Year 1903	20,000.00
Year 1904	12,500.00
Year 1905	10,000.00
Year 1906	13,000.00
Total	$65,500.00

In conjunction with the question of depreciation must be considered the

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present practice of charging to the cost of manufacture and distribution such expenses as the refilling of benches, the expense of making service connections from the main to the curb and of setting meters in the premises of consumers.

We find that in the year 1906 the company entered into a contract with Parker-Russell & Company of St. Louis, Mo., to refill three benches of nines at a cost of $1,862.76. This cost was duly charged to Repair Account. The work, we understand, was not completed in 1906 and during the year 1907 considerable expense was incurred completing it. This expense we cannot ascertain owing to the very unsatisfactory manner in which the accounts are kept. In the year 1905, we are informed, three benches of sixes were also refilled, but we have been unable to identify the charge. Having in view the fact that these are not annual charges, but recur probably once

every three years, we consider that instead of charging them as has been done, annual provision should be made in respect of depreciation and the expense, thereafter, charged against that provision. Taking everything into consideration and also having in view the fact that the works have been maintained in the highest state of efficiency, we are of opinion that an allowance for depreciation on the works, including all property connected with the manufacture of gas at five cents per thousand cubic feet manufactured, is not only sufficient but liberal. We have, therefore, eliminated, so far as we have been able to ascertain them, all charges not of such a nature as will recur annually and have substituted the above mentioned charge of five cents per thousand cubic feet manufactured.

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General Repairs. The charges on account of repairs to propeprty vary considerably from year to year. Those for the year 1906 are considerably higher than any for the previous years. They are, for the period under examination, as follows:

	Amount.	Per M c. f. distributed.
Year 1902	$1,915.27	3.86 cents
Year 1903	1,460.91	2.48 cents
Year 1904	1,437.49	2.21 cents
Year 1905	1,940.90	2.52 cents
Year 1906	3,258.38	3.57 cents
Average		2.93 cents

As already explained, part of this expense might be more properly applicable to the cost of manufacture. It is, however, impossible to segregate the charges.

During the period under review the following allowances were made in respect of Repairs and Depreciation:

	1902.	1903.	1904.	1905.	1906.
Repairs to apparatus	$	.....	.....	246.28	389.58
General repairs	1,915.27	1,460.91	1,437.49	1,940.90	3,258.38
Installing new stoves, meters, etc., and free work, etc.	283.99*	972.80	39.60	6,758.98	5,943.83
Depreciation	2,708.47	3,259.55	3,666.48	4,431.71	5,330.82
Total	$4,339.75	5,693.26	5,143.57	13,377.87	14,922.61

[* In red ink in copy.]

For the first three years we have been unable to ascertain the amount of the Repairs and Renewals on the works. Were these added,

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the above figures might be considerably increased. Stated on the basis of "per thousand cubic feet sold" these are as follows:

	1902.	1903.	1904.	1905.	1906.	Aver.
Repairs to apparatus	c.....	.....	.....	.32	.42	.19
General repairs	3.86	2.48	2.21	2.52	3.57	2.93
Installing new stoves, meters, etc., and free work, etc.	.....	1.65	.06	8.78	6.51	3.92
Depreciation	5.47	5.53	5.62	5.76	5.84	5.67
Total	c8.76	9.66	7.89	17.38	16.34	12.71

Fittings Account. The practice of the company has been to pay that part of the expense of making a connection, between their own mains and the premises of the consumer, as is represented by the length of pipe between the main and the street curb. The expense from the curb to the meter is borne by the consumer, the work, however, being done by the company.

The company, in addition to manufacturing and selling gas, conducts a merchandise business in gas stoves, lamps and fittings. Their profit on these is calculated as sufficient to pay the expense of handling including breakages incident thereto.

During the period under examination the charges to this account fluctuate very considerably. The charges during the last two years are especially heavy and for this we have been unable to secure a satisfactory explanation. The details for each of the years are, as follows:

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	Amount	Per M c. f. Distributed
Year 1902	$283.99*	.57 cents
Year 1903	972.80	1.65 cents
Year 1904	39.60	.06 cents
Year 1905	6,758.98	8.78 cents
Year 1906	5,943.83	6.51 cents
Average		3.92 cents

[* In red ink in copy.]

Before deciding to allow these amounts to stand as charges against the operation of the business, we gave careful consideration to the question of depreciation on the mains, services and meters. In view of the facts above mentioned, viz: that the expense of making connections from the main to the curb have been charged to the cost of distributing gas and that in addition the expense of setting meters has also been included therein, we have concluded to make no further allowance in respect of depreciation. In this connection we might mention that Mr. A. T. Averill, in his affidavit of August 9, 1907, includes in his value of the property all service connections and also governing the operation of this plant were carefully considered before arriving at our decision. The amounts included in operating, but which should properly be charged to construction, more than offset, in our opinion, any depreciation on the property.

Taxes. The charges for taxes are as follows:

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Statement of Taxes.

	Amount	Per M c. f. Distributed
Year 1902	$1,716.00	3.47 cents
Year 1903	1,690.67	2.87 cents
Year 1904	1,848.32	2.83 cents
Year 1905	2,026.40	2.64 cents
Year 1906	1,965.36	2.16 cents
Average		2.70 cents

These do not call for any special comment.

In Exhibit "A" office rent for the years 1902, 1903 and 1904, has been included under the head of Office Expense.

General Expenses. These, including salaries of officers and clerks, etc., general and office expenses, are as follows:

	Amount	Per M c. f. Distributed
Year 1902	$5,820.27	11.75 cents
Year 1903	6,015.79	10.22 cents
Year 1904	7,013.93	10.76 cents
Year 1905	6,865.87	8.92 cents
Year 1906	7,878.20	8.62 cents
Average		9.83 cents

Leakage. In calculating the cost of manufacturing the gas, we have divided the total cost by the quantity manufactured before giving effect to any adjustments in respect of temperature. The cost of distributing, or that expense incurred after the gas left the holder, is ascertained by dividing the total distributing expense, including leakage, by the quantity sold. Under consumers, we have excluded

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those at Marion.

We have already submitted a statement of the gas sent out of the works to consumers but desire, at this point, to bring to your attention the large difference between the quantity manufactured and that sold. This leakage, is in our opinion, excessive.

	Quantity cubic feet.	Per cent of manufacture.	Per M. c. f. distributed.
Year 1902	4,646,770	8.58	3.30 cents
Year 1903	5,876,370	9.01	3.80 cents
Year 1904	8,225,230	11.22	5.36 cents
Year 1905	11,786,680	13.30	5.91 cents
Year 1906	13,657,640	12.81	6.15 cents
Total and averages	44,192,690	11.39	5.13 cents

To ascertain the leakage, in cents per thousand cubic feet, we calculated it at the cost of manufacture and divided by the quantity distributed.

We now submit a statement of the difference between the cost of manufacturing and distributing gas as detailed by the company and as prepared by us:

Company:	1902.	1903.	1904.	1905.	1906.
Total cost	$52,249.14	71,799.48	68,955.68	85,046.96	94,597.87
Deduct:					
Residuals	12,887.70	16,345.92	13,976.43	17,863.50	17,387.58
Net cost	39,361.44	55,453.56	54,979.25	67,183.46	77,210.29
M. M. & Co. cost	28,231.62	35,128.06	41,530.06	51,881.53	62,877.18
Difference Carried Forward	$11,129.82	20,325.50	13,449.19	15,301.93	14,333.11

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	1902.	1903.	1904.	1905.	1906.
Difference for'd	$11,129.82	20,325.50	13,449.19	15,301.93	14,333.11
Consisting of:					
Depreciation	7,291.53	16,740.45	8,833.52	5,568.29	7,069.18
Bond interest	3,000.00	3,083.35	3,912.50	3,788.75	3,750.00
Int. on loans	252.34	267.92	453.59	142.29	866.17
"Annex" taxes	220.00	215.00	162.46	175.60	185.00
Sundry credits omitted	81.96	18.18	126.72	.....	.....
"Fittings" credit omitted	283.99	.....	*39.60	.....	.....
Sundry charges (unexplained)	.....	.60	.....	5,627.00	.....
New benches, Capital	.....	.....	.....	.....	1,862.76
As above	$11,129.82	20,325.50	13,449.19	15,301.93	14,333.11

[* In red ink in copy.]

The following are our reasons for eliminating the above charges from the cost of manufacturing and distributing gas.

Depreciation. The charge made by the company was an arbitrary one. In lieu thereof we have substituted what, in our opinion, is a reasonable allowance for the wear and tear and final obsolescence of the plant.

Interest on Bonds and Borrowed Money. Interest payable on borrowed money is not a charge against the cost of the product. It is a charge against the profit on the operation of the business before determining what, if any, profit accrues to the stockholders.

"Annex" Taxes. The property, known as "The Annex," is an investment of the company but is not used for the purpose of the business. Neither is it required in view of possible extensions rendered necessary by an increased business. We have, therefore, eliminated both the charges for taxes and expenses and the credit in respect of rent.

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Sundry Credits. These credits are in respect of miscellaneous receipts the original charges for which were made and included with expenses. We have not been able to ascertain the exact nature of these entries.

"Fittings" Credit. In the year 1902 a profit of $283.99 was made on this account. As, in all subsequent years, except 1904, the loss on the account was included as an expense of the business, we have treated this credit as a deduction from the expenses of the year in which it applies.

Sundry Charges. The item of sixty cents in the year 1903 cannot be explained. The charge of $5,627.00 in 1905 we have already referred to when criticising Mr. A. T. Averill's affidavit.

New Benches—Capital. We have explained, in an earlier part of this report, our reason for excluding this charge from operating expenses.

4. The question before the court is whether the Cedar Rapids Gas Light Company can operate its business at a profit if it sold gas to the consumers of the city at a price of ninety cents per thousand cubic feet. Several considerations enter into this question. Stated briefly they are:

(*a*) What effect would a reduction in the price have upon the quantity sold?

The business has grown rapidly during the past three years, as is shown by the following statement of sales for the two years 1905 and 1906 and the first eight months of the present year. In order to

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estimate the sales for the whole year we have included the last four months on the basis of the increase of the same four months of 1906 over 1905. In these figures the sales to the consumers of the town of Marion have been excluded.

	Year 1905.		Year 1906.		Year 1907.	
	Am't.	% increase over 1904.	Am't.	% increase over 1905.	Am't.	% increase over 1906.
January	6,019,100	11.88	8,199,500	36.22	9,111,800	11.12
February	5,210,500	3.85	7,052,300	35.34	7,289,000	3.36
March	5,640,300	5.82	7,500,100	32.97	9,403,800	12.04
April	5,055,100	†.68	6,850,800	35.52	9,957,600	30.75
May	5,573,000	18.17	7,168,800	28.63	9,713,500	35.50
June	5,601,000	13.68	6,825,900	21.86	8,730,200	27.89
July	5,763,200	21.62	6,551,700	13.68	8,133,500	24.14
August	6,402,000	25.96	7,071,600	10.45	8,459,800	19.63
September	7,195,200	24.48	7,765,600	7.92	*8,380,635	7.92
October	8,221,600	35.06	9,047,600	10.04	*9,955,979	10.04
November	7,550,100	21.50	9,007,400	19.30	*10,745,828	19.30
December	9,551,200	39.55	9,264,800	†3.00	*8,986,856	†3.00
Total	77,782,300	19.28%	92,306,100	18.67%	106,868,498	15.78%
Used at works	825,000	.....	974,700	18.14%	*1,128,508	15.78%
Sold to consumers	76,957,300	.....	92,331,400	18.67%	105,739,990	15.78%

*Estimated.

[† In red ink in copy.]

This statement records a steady growth. Only in one month, viz.: December, 1906, were the sales less than those of the corresponding month of the previous year. In the year 1906 the sales exceeded those of 1905 by 18.67 per cent. while, judging from the known results of 1907, the business of that year will exceed 1906 by 15.78 per cent. The tendency is for increased consumption to follow a reduction in price. Apart from this, we understand the City of Cedar Rapids is rapidly growing. This and

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the increased use of gas for domestic perposes, are certain to result in a large increase in the volume of business from year to year.

(*b*) What is the cost of manufacturing and distributing gas exclusive of any charge for interest or the use of the plant?

An examination of the accounts, already submitted, reveals considerable variation in the charges. More especially is this so in the Repair and Fittings Accounts. Eliminate these and the cost, from year to year, is approximately the same. For the present purpose we have decided, after careful consideration, that the correct method is to accept the average price of the past five years, viz.: 1902 to 1906, as that upon which to base our calculations. The average cost for the five years is as follows:

Manufacturing	39.53 cents
Distribution, including leakage	24.51 cents
Total	64.04 cents

The president of the plaintiff company stated, in his affidavit of August 9, 1907, that the price of coal has increased during the current year. This increase will be, at least in part, offset by the reduction in the average cost effected by the manufacture of a larger quantity of gas and an increase in the price realized from coke, the bi-product of the coal.

(*c*) An important factor entering into this question is the capital invested in the business, and upon which a return must be earned. In this connection we must consider that the Cedar Rapids Gas Light

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Company manufactures gas for sale not only in Cedar Rapids, but in Marion. Upon the investment for the supply of this latter town, the consumer of the former cannot be expected to pay a return. It must also be considered that the company owns property for purposes other than the manufacture and distribution of gas. We refer to the property known as "The Annex." For the purpose of ascertaining the capital invested, we have examined the inventory submitted in the affidavit by the president of the plaintiff company of date August 9, 1907, and have

eliminated therefrom such items as are, in our opinion, improperly included. We are not in a position to state whether the property has been accurately recorded or appraised at a reasonable value.

	Inventory of plaintiff.	Eliminated by M. M. & Co.	Adjusted.
Lands	$30,000.00	10,000.00	20,000.00
Buildings	36,820.00	6,500.00	30,320.00
Walls and fences	1,850.00	.....	1,850.00
Works and apparatus	117,575.50	1,600.00	115,975.50
Mains	118,986.00	5,483.00	113,503.00
Service connections	15,289.00	.....	15,289.00
Meters	30,229.50	.....	30,229.50
Office furniture	1,771.00	.....	1,771.00
Arc lamps, rented & lo'n'd	3,575.00	.....	3,575.00
Material and supplies	9,828.00	.....	9,828.00
	365,924.00	23,583.00	342,341.00
Working capital	25,000.00	22,500.00	2,500.00
	$390,924.00	46,083.00	344,841.00

The Lands and Buildings eliminated represent the property known as "The Annex." It is not used for the purpose of either the manufacture or distribution of gas.

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The $1,600.00 included in Works and Apparatus represents second hand material lying at the works. It is not a necessary adjunct to the business.

We have excluded $5,483.00 in respect of the H. P. main connecting with the Marion system. This is more properly an asset of the Marion system.

The amount claimed for Working Capital is, in our opinion, excessive. The company carries a large stock of material and supplies and conducts what is practically a cash business and we consider an allowance of $2,500.00 ample.

The estimated sales in Cedar Rapids for the year 1907, based on the actual sales for the first eight months of the year, and estimating the remaining months at the rate of increase of the corresponding months of the year 1906 over 1905, amount to 105,749,990 cubic feet. Based on an average selling price of 90c. per thousand cubic feet, we have a revenue of $95,165.99. The cost of manufacturing and distributing this quantity of gas exclusive of any charge for interest or for the use of the plant at the average price of the five years 1902 to 1906, is 64.04 cents per thousand cubic feet. This amounts to $67,715.89. Stated clearly, these results are as follows:

		Amount.	Per M c.f.
Estimated sales, year 1907, 105,739,990 cu. ft.		$95,165.99	90.00c
Estimated cost at average of five years		67,715.89	64.04c
Surplus available for distribution		$27,450.10	25.96c
As follows:			
Interest on mortgage bonds	$75,000.00 at 5. %	3,750.00	3.55c
Dividend on capital investment	269,841.00 at 8.783%	23,700.10	22.41c
	$344,841.00		
As above		$27,450.10	25.96c

1025 (Page 29 of Hall's Report.)

As already stated, the company appraises its property, including $25,000.00 of working capital, at $390,924. From this amount we have eliminated $40,083.00, as shown on page 27 of this report. On the property there has been issued mortgage bonds aggregating $75,000.00 and carrying interest at 5 per cent. per annum. If our amended appraisement of the company's property is accepted as correct and if the return is to be based not on the capital stock but on this figure, they will be entitled to it upon $269,841.00. For distribution to the stockholders there is available, after paying the interest on the mortgage bonds, the sum of $23,700.10. This is equivalent to 8.783 per cent. on such amended appraised values after deduction of the mortgage bonds and of 15.8 per cent. on the capital stock of the company.

Should there be any further information you may desire, we shall be pleased to furnish it.

Yours truly,

MARWICK, MITCHELL & CO.,
Chartered Accountants.

EXHIBIT "A."
COST OF MANUFACTURING AND DISTRIBUTING GAS.
For Each of the Five Years Ended December 31, 1902, 1903, 1904, 1905 and 1906.

	Year 1902. Divisor 54,169,480		Year 1903. Divisor 65,191,010		Year 1904. Divisor 73,329,600		Year 1905. Divisor 88,634,210		Year 1906. Divisor 106,616,320	
	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents
Coal	$						35,497.00	40.04	35,942.03	33.71
Residuals:										
Coke							18,876.80	21.30	18,221.54	17.09
Labor handling and freight							2,228.94	2.52	1,691.20	1.59
Net coke							16,647.86	18.78	16,530.34	15.50
Coal tar							1,335.39	1.51	1,114.55	1.05
Total residuals							17,983.25	20.29	17,644.89	16.55
Net cost, less residuals							17,513.75	19.75	18,297.14	17.16
Coke used:							525.00	.60	2,768.00	2.60
Coke used							197.58	.22	845.40	.79
Labor							722.58	82	3,613.40	3.39
Total coke used							1,105.00	1.24	5,926.30	5.56
Miscellaneous:							8,512.46	9.61	8,470.68	7.94
Gas oil including labor handling							9,617.46	10.85	14,396.98	13.50
Labor							27,853.79	31.42	36,307.52	34.05
Total miscellaneous										
Total material and labor										
Repairs and expenses:										
Repairs to apparatus							246.28	.28	389.58	.37
Depreciation of plant	2,708.47	5.00	3,259.55	5.00	3,666.48	5.00	4,431.71	5.00	5,330.82	5.00
Sundries including purifying material							832.60	.94	603.49	.57
Superintendent's salary							925.00	1.04	1,200.00	1.12
Total repairs and expenses							6,435.59	7.26	7,523.89	7.06
Net manufacturing cost	16,355.60	30.19	21,728.34	33.33	27,524.24	37.53				
Total station cost—carried forward	$19,064.07	35.19	24,987.89	38.33	31,190.72	42.53	34,289.38	38.68	43,831.41	41.11

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EXHIBIT "A"—CONTINUED.
COST OF MANUFACTURING AND DISTRIBUTING GAS.
(Continued.)

	Year 1902. Divisor 49,527,800		Year 1903. Divisor 58,880,900		Year 1904. Divisor 65,205,400		Year 1905. Divisor 76,957,300		Year 1906. Divisor 91,331,400	
	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents	Amount	Cost per M. c. f. Cents
Total station cost—brought forward	$19,064.07	35.19	24,987.89	38.33	31,190.72	42.53	34,289.38	38.68	43,831.41	41.11
Distribution:										
General repairs	1,915.27	3.86	1,460.91	2.48	1,437.49	2.21	1,940.90	2.52	3,258.38	3.57
Installing new stoves, meters and free work	283.99	.57	972.80	1.65	39.60	.06	6,758.98	8.78	5,943.83	6.51
Total distribution	1,631.28	3.29	2,433.71	4.13	1,477.09	2.27	8,699.88	11.30	9,202.21	10.08
Total material, labor and distribution	20,695.35	38.48	27,421.60	42.46	32,667.81	44.80	42,989.26	49.98	53,033.62	51.19
General expenses:										
Rent and taxes	1,716.00	3.47	1,690.67	2.87	1,848.32	2.83	2,806.40	3.65	2,745.36	3.01
Wages							663.21	.86	879.19	.96
Salaries							4,529.30	5.89	4,840.00	5.30
Expenses	5,820.27	11.75	6,015.79	10.22	7,013.93	10.76	407.36	.53	709.01	.78
Bonus (Christmas)							486.00	.63	670.00	.73
Total general expenses	7,536.27	15.22	7,706.46	13.09	8,862.25	13.59	8,892.27	11.56	9,843.56	10.78
Total operating expenses	28,231.62	53.70	35,128.06	55.55	41,530.06	58.39	51,881.53	61.54	62,877.18	61.97
Adjustment account of leakage and gas used at works at cost to manufacture:										
4,646,770 cubic feet 1902										
5,836,370 cubic feet 1903										
8,225,230 cubic feet 1904										
11,786,680 cubic feet 1905										
13,657,640 cubic feet 1906		3.30		3.80		5.36		5.91		6.15
Total cost	$28,231.62	57.00	35,128.06	59.35	41,530.06	63.75	51,881.53	67.45	62,877.18	68.12

EXHIBIT "B."

Comparative Balance Sheet as at December 31, 1906, 1905, 1904, 1903, *and* 1902.

Assets.

Real Estate, Etc.:	1906.	1905.	1904.	1903.	1902.
Real estate, buildings, plant and equipment at works, etc...	$236,960.05	237,329.49	214,514.34	224,616.68	169,100.00
Property known as "The Annex".....	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00
Property connected with Marion extension.....	25,974.60	.....	.....	.....	.....
Total real estate, etc.....	270,434.65	244,829.49	222,014.34	232,116.73	176,600.00
Franchise rights	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00
Material and supplies including gas in holder and amounts due for gas supplied, etc.....	12,837.00	18,384.62	16,463.38	16,390.85	15,370.89
Cash in bank and on hand.....	400.67	320.80	610.63	221.03	1,070.39
Total assets	$433,672.32	413,534.91	389,088.35	398,728.66	343,041.28

Liabilities.

Capital stock	$150,000.00	150,000.00	150,000.00	150,000.00	150,000.00
Mortgage bonds—5 per cent.....	75,000.00	75,000.00	75,000.00	75,000.00	60,000.00
Total capital stock and mortgage bonds.....	225,000.00	225,000.00	225,000.00	225,000.00	210,000.00
Current Liabilities:					
Bills payable	31,000.00	3,000.00	10,500.00	8,500.00	.....
Sundry creditors	8,067.52	12,540.75	4,031.68	9,263.11	2,037.87
Total current liabilities.....	39,067.52	15,540.75	14,531.68	17,763.11	2,037.87
Surplus account	169,604.80	172,994.16	149,556.67	155,965.55	131,003.41
Total liabilities	$433,672.32	413,534.91	389,088.35	398,728.66	343,041.28

1029 SCHEDULE "1."

Summary of Investment by the Cedar Rapids Gas Light Company.

As Detailed in Affidavit of President Dated August 9, 1907.

Lands	$30,000.00	
Buildings	36,820.00	
Walls and fences	1,850.00	
Works and apparatus	117,575.50	
Mains	118,986.00	
Service connections	15,289.00	
Meters	30,229.50	
Office furniture	1,771.00	
Arc lamps—rented or loaned	3,575.00	
Total real estate, plant and equipment		$356,096.00
Material and supplies		9,828.00
Working capital		25,000.00
Total investment		$390,924.00

Particulars of Investment of the Cedar Rapids Gas Light Company.

As Detailed by President in His Affidavit August 9, 1907.

Lands.

Land upon which works are located	$15,000.00	
Land upon which new holder is located	5,000.00	
1030		
Land recently purchased	10,000.00	
Total lands		$30,000.00

Buildings.

13 frame houses	$6,500.00	
Shop building	1,500.00	
Store room building	1,450.00	
Coal store building	6,450.00	
Retort house (includes Nos 7, 8, and 9)	7,850.00	
Coal gas apparatus room	3,745.00	
Boiler house	900.00	
Purifying building	5,800.00	
Pump pit	175.00	
Wooden coke shed	1,200.00	
Stable	1,250.00	
Total buildings		$36,820.00

Walls and fences.

Retaining wall and fences	$1,100.00	
Rip-rapping on river bank	750.00	
Total walls and fences		$1,850.00

Works and Apparatus.

No. 2 holder	$15,000.00
No 1 holder	5,000.00
No. 3 holder	42,500.00
Governor pit	250.00
1031 Ammonia well	300.00
Tar well	175.00
Iron oil tank	730.00
Concentrated ammonia tank	730.00
24 tar cisterns	400.00
Contents of shop—lathes, meter prover and tools	607.50

Contents of Store Room.

2 extra fillings (Parker-Russell) full benches of 9's	1,620.00
Brick, stand-pipe, valves, blower and pump	318.00

Contents of Coal Store.

Scales and coal wagons	150.00

Contents of Retort House.

3 benches of 9's complete	9,800.00
3 benches of 6's complete	6,750.00
6 ft. complete water gas set	4,500.00
Engine and blower	250.00
Blast pipe, tools, 10 in. foul main, water gas coaling hopper	447.00

Contents of Boiler Room.

2-16 in. x 72 in. Hw. Jut. boilers and fittings	2,100.00
Steel stack 40 in. x 60 ft. high	250.00
Hancock injectors, 4 ton Howe scales and tools	120.00

1032 Contents of Meter and Office Room.

Station meter	2,100.00
Desks, chairs, gauges and photometers	102.00

Contents of Scrubber and Condenser Room.

1-23 ft. x 8 ft. condenser	1,800.00
1-8 ft. x. 4 ft. rec. washer	480.00
1-20 ft. x 8 ft. scrubber	1,800.00
1-20 ft. x 8 ft. final scrubber	1,800.00
1-36 in. ammonia condenser complete	3,000.00
1 tar separator	150.00
12-16 in. valves including connecting pipes	840.00

Contents of Engine Room.

2-8 H. P. Troy engines	350.00
2-10 in. Connersville exhausters	750.00
1-10 in. P. & A. tar extractor	175.00
1-6 ft. station meter	600.00
2-6 in. x 10 x 6 in. Clayton compressors.	1,250.00
Platform wagon scales, 6 tons capacity	200.00

Contents of Purifying Room.

4-16 ft. x 22 ft. x 3 ft. purifying boxes	5,000.00
Contents of pump pit—2 Worthington pumps	230.00
Contents of stable—4 horses, 1 dray, 3 wagons, and 1 bob sled	1,110.00
1033 Contents of governor pit—12 in. governor and 16 in. pass connections	625.00

Second Hand Material.

4 purifiers, 1 exhauster, 1 station meter and 1 condenser	1,600.00
Yard connections—20 in., 16 in., 12 in., 10 in., and 6 in. C. I. pipe, 5 in. W. I. pipe	1,476.00
Bench and tools at office	140.00
Total works and apparatus	$117,575.50

Mains.

27450 ft. 2 in. W. I. pipe (E. S.)	$3,902.00
34275 ft. 2 in. W. I. pipe (W. S.)	4,884.00
39450 ft. 3 in. W. I. pipe (E. S.)	9,953.00
19550 ft. 3 in. W. I. pipe (W. S.)	4,932.00
17200 ft. 4 in. W. I. pipe (E. S.)	6,267.00
6900 ft. 4 in. W. I. pipe (W. S.)	2,510.00
1600 ft. 6 in. W. I. pipe (Bridge)	768.00
8400 ft. 3 in. W. I. pipe (H. P.)	426.00

5400 ft. 4 in. C. I. pipe No. 20 (E. S.)..	2,592.00	
13650 ft. 4 in. C. I. pipe No. 20 (W. S.).	6,552.00	
21300 ft. 6 in. C. I. pipe No. 30 (E. S.)..	14,271.00	
8650 ft. 6 in. C. I. pipe No. 30 (W. S.)..	5,795.00	
6550 ft. 10 in. C. I. pipe No. 56..	7,434.00	
1034 3950 ft. 12 in. C. I. pipe No. 75...	5,727.00	
550 ft. 16 in. C. I. pipe No. 112..	1,199.00	
23760 ft. 3 in. H. P. to Marion.....	5,483.00	
Add for 15000 ft. under asphalt.....	8,000.00	
Add for 68900 ft. under brick.....	28,291.00	
Total mains.....		$118,986.00

Service Connections.

4000 service connections from main to curb, 20 ft. each of 1 in.; 1¼ in. and ½ in. W. I. pipe.....	8,000.00	
Add for 5334 ft. under asphalt.....	2,844.00	
Add for 10668 ft. under brick.....	4,445.00	
Total service connections.....		$15,289.00

Meters

3 lights, 1830 at $6.50.....	$11,895.00	
5 lights, 1173 at $7.83.....	9,184.00	
10 lights, 742 at $9.50.....	7,049.00	
20 lights, 16 at $12.75.....	204.00	
30 lights, 33 at $17.00.....	561.00	
45 lights, 14 at $24.25.....	339.00	
80 lights, 1 at $44.35	44.00	
100 lights, 2 at $54.00.....	108.00	
100 meters in repair.....	562.50	
50 meters for use	283.00	
Total meters		$30,229.50

1035 Office Furniture.

1 safe	$225.00
1 flat top desk.....	35.00
1 roll top desk	80.00
1 small top desk	25.00
1 table	15.00
1 copying machine	25.00
1 addressograph	150.00
One-half partition at rear of office.....	225.00
1 counter	500.00
4 pieces rubber matting	15.00
2-4 light fixtures	10.00
1-16 light display fixture.....	50.00

1 arc lamp	6.00	
Books, stationery, etc.	300.00	
Map of mains	75.00	
1 roll top desk (at shop)	35.00	
Total office furniture		$1,771.00

Arc Lamps Rented or Loaned.

550 arc lamps rented or loaned by customers, but owned by the company	$3,575.00	
Total arc lamps rented or loaned.		$3,575.00

Materials and Supplies.

1 recording pressure gauge	$40.00	
6 gas ranges	90.00	
1036 Welsbach lamp supplies	250.00	
Arc lamp supplies	125.00	
Pipe and fittings (at shop office)	175.00	
Water heaters	50.00	
Lead pipe, pipe and fittings	150.00	
3 coils rope yarn	10.00	
Sundry small stuff	25.00	
1,000 tons Yough'y gas coal at $4.52	4,520.00	
4100 bushels oxide	615.00	
20 tons of coke	110.00	
In holder No. 1, 40,000 cu. ft. gas	20.00	
Hay, grain & bedding for horses	75.00	
In holder No. 3, 400,00- cu. ft.	400.00	
10,000 gals. weak ammoni-cal liquor	100.00	
12,000 gals. tar in tar wells	300.00	
10,000 gals. oil	458.00	
4,000 lbs. concentrated ammonia	250.00	
2,000 gals. tar in cisterns	50.00	
Pipe, crosses and Tees	1,145.00	
12,905 lbs. specials, also valves and expansion joints	870.00	
Total materials and supplies		$9,828.00
Total real estate, buildings, machinery, equipment and materials and supplies		365,924.00
Working capital		25,000.00
Total investment		$390,924.00

SCHEDULE "2."

Yearly Report of Operations.

From 1897 to 1906.

Year.	Sent Out.	Meter Sales.	Leakage.	Per cent.	Coal Gas.	Yield.	Water Gas.	Fuel.	Oil.	Meters in use Dec. 31.	Gain.
1897.....	23,429,110	20,899,200	2,529,910	11.0	20,974,600	5.01	2,454,500	.54	5.3	1,085	303
1898.....	28,349,630	25,768,300	2,581,330	9.2	21,029,300	4.88	7,320,330	.44	5.1	1,319	234
1899.....	35,762,650	30,000,000	5,762,650	19.0	31,945,290	4.91	3,817,360	.50	5.4	1,497	178
1900.....	38,100,490	34,680,100	3,420,390	9.0	31,009,000	4.90	7,091,490	.47	4.7	1,638	141
1901.....	43,093,010	38,530,600	4,562,410	10.6	37,996,120	4.89	5,096,890	.49	5.0	1,871	233
1902.....	54,164,920	49,527,800	4,637,130	8.1	43,974,000	4.88	10,159,930	.42	4.9	2,109	238
1903.....	64,757,270	58,880,900	5,876,370	9.0	56,585,320	4.80	8,673,630	.42	5.2	2,336	227
1904.....	73,430,630	65,205,400	8,225,230	11.2	59,101,600	4.72	14,229,900	.39	4.4	2,600	264
1905.....	*86,723,100	77,782,300	8,940,800	10.3	83,556,000	5.02	5,073,490	.42	4.7	3,309	709
1906.....	*100,764,000	92,306,100	8,457,900	8.5	74,858,300	4.70	30,819,900	.36	3.9	3,738	429
Marion 1906		1,473,200	.....	....	.....	....	.....	...	...	274	274

* Do not agree with monthly summaries.

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SCHEDULE "3."

SUMMARY OF DAILY RECORD

FOR YEAR ENDED DECEMBER 31, 1906.

	Gas made	Consumption	Water Gas taken	Water gas made	Fuel	Lbs. per M. c. f. made	Oil	Galls. per M. c. f.	Coal gas made	Gas coal lbs.	Yield per lb. cu. ft.	Candle power
January	9,355,000	9,228,340	1,011,000	1,054,090	54,050	54.	4,587	4.6	8,344,000	1,696,750	4.90	18
February	7,658,000	7,727,240	862,000	827,980	41,800	50.	3,542	4.2'	6,796,000	1,377,250	4.92	18
March	8,456,000	8,487,900	1,104,500	1,097,700	48,575	44.	4,141	3.8	7,351,500	1,503,750	4.90	18
April	8,188,000	8,136,960	1,835,500	1,815,080	73,500	40.	6,976	3.9	6,352,500	1,294,000	4.90	18
May	7,929,000	7,922,320	3,000,000	3,211,040	110,950	37.	11,917	3.9	4,929,600	1,040,000	4.74	18
June	7,550,680	7,503,920	2,720,000	2,697,320	94,950	35.	10,850	4.0	4,830,680	1,034,000	4.67	18
July	7,550,000	7,574,180	2,400,000	2,402,680	87,375	36.	10,110	4.2	5,150,000	1,096,000	4.70	18
August	8,272,000	8,044,080	3,377,000	3,572,160	114,210	32.	12,994	3.6	4,625,000	1,038,000	4.45	18
September	9,142,700	8,966,000	3,891,600	4,161,730	131,500	31.	16,119	3.9	5,249,000	1,177,000	4.46	18
October	10,349,000	10,349,000	3,322,000	3,307,820	109,300	33.	12,832	3.9	7,029,920	1,452,500	4.84	18
November	10,250,000	10,220,000	3,134,500	3,116,360	108,725	34.9	12,574	4.03	7,115,500	1,464,300	4.85	18
December	11,086,000	11,112,720	4,003,500	3,994,430	133,770	33.	15,583	3.9	7,082,500	1,521,500	4.66	18
	105,786,380	105,272,660	30,661,600	31,258,390	1,108,705	35.5	122,225	3.9	74,856,200	15,695,050	4.77	18

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SCHEDULE "5."

COMPARATIVE STATEMENT OF CHARGES FOR GAS COAL USED.

	1905					1906					1907				
	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton	Monthly Charge	Quantity lbs.	Average Per ton	Purchase Price Per ton	Handl'g & Shrinkage Per ton
January ...$	2,960.00	1,392,400	$4.2516	4.15	.1016	3,605.00	1,696,790	$4.2492	4.15	.0992	3,836,00	1,668,000	$4,5995	4.45	.1495
February ..	2 500.00	1,178,100	4,2441	4.15	.0941	2,925,00	1,377,250	4,2476	4.15	.0976	3,450.00	1,500,000	4,6000	4.45	.1500
March	2,635.00	1,239,800	4.2506	4.15	.1006	3,200.00	1,510,750	4,2363	4.15	.0863	3,800.00	1,652,000	4,6005	4.45	.1505
April	2,450.00	1,153,300	4,2486	4.15	.0986	2,750.00	1,294,000	4,2504	4.15	.1004	4,705.80	2,046,000	4,6000	4.45	.1500
May	2,695.00	1,268,400	4,2494	4.15	.0994	2,250.00	1,040,000	4.3269	4.15	.1769	4,807.00	2,090,000	4,6000	4.45	.1500
June	2,700.00	1,270,900	4,2489	4.15	.0989	2,200.00	1,034,000	4,2553	4.15	.1053	3,051,80	1,312,000	4,6521	4.45	.2021
July	3,062,00	1,441,000	4,2498	4.15	.0998	2,500.00	1,096,000	4,5620	4.45	.1120	2,513.70	1,058,400	4,7500	4.45	.2000
August	3,015.00	1,418,000	4,2524	4.15	.1024	2,335.00	1,038,000	4,4990	4.45	.0490					
September .	3,150.00	1,482,750	4,2488	4.15	.0988	2,765.00	1,177,000	4,6983	4.45	.2483					
October	3,420.00	1,606,000	4,2590	4.15	.1090	3,340.00	1,452,500	4,5989	4.45	.1489					
November ..	3,350.00	1,576,300	4,2512	4.15	.1012	3,370.00	1,464,300	4,6028	4.45	.1528					
December ..	3,560.00	1,676,300	4,2474	4.15	.0974	3,610.00	1,521,500	4.7453	4.45	.2953					
	$35,497.00	16,702,950	$4.2503	4.15	.1003	34,850.00	15,702,090	$4.4389	4.30	.1389					

COMPARISONS.

Charge Per Ton for Handling and Shrinkage.

	1905	1906	1907
January .....$	.1016	.0992	.1495
February	.0941	.0976	.1500
March	.1006	.0863	.1505
April	.0986	.1004	.1500
May	.0994	.1769	.1500
June	.0989	.1053	.2021
July	.0998	.1120	.2000
August	.1024	.0490	
September	.0988	.2483	
October	.1090	.1489	
November	.1012	.1528	
December	.0974	.2953	

SCHEDULE "6."

Comparative Statement of Average Sales per Meter in Cubic Feet.

	Meter sales.			Number of meters in use.			Average sales per meter.		
	1905.	1906.	1907.	1905.	1906.	1907.	1905.	1906.	1907.
January	6,019,100	8,199,500	9,111,800	2,600	3,309	3,738	2,315	2,478	2,437
February	5,210,500	7,052,300	7,289,000	2,610	3,309	3,742	1,996	2,131	1,048
March	5,640,300	7,500,100	8,403,800	2,620	3,309	3,758	2,153	2,267	2,236
April	5,055,100	6,850,800	8,957,600	2,641	3,319	3,771	1,914	2,064	2,375
May	5,573,000	7,168,800	9,713,500	2,791	3,410	3,836	1,997	2,102	2,532
June	5,601,000	6,825,900	8,730,200	2,913	3,461	3,887	1,923	1,972	2,246
July	5,763,200	6,551,700	8,133,500	3,009	3,521	3,934	1,915	1,861	2,067
August	6,402,000	7,071,600	.....	3,143	3,586	....	2,036	1,966	....
September	7,195,200	7,765,600	.....	3,244	3,680	....	2,218	2,110	....
October	8,221,600	9,047,600	.....	3,300	3,730	....	2,491	2,425	....
November	7,550,100	9,007,400	.....	3,308	3,732	....	2,282	2,413	....
December	9,551,200	9,264,800	.....	3,309	3,738	....	2,886	2,478	....
	77,782,300	92,306,100							

1042 SCHEDULE "7."

Residuals.

	1905	1906
Coke:		
Coke sold and used in manufacture of water gas	$ 16,906.80	$ 21,735.54
Increase or *Decrease** in stock	1,970.00	**3,514.00*
	$ 18,876.80	$ 18,221.54
Less:		
Wages	$ 2,219.14	$ 1,639.98
Freight	9.80	51.22
Coke baskets	36.61	24.16
Horse feed, etc	33.32	106.96
	$ 2,298.87	$ 1,822.32
Net residual from coke	$ 16,577.93	$ 16,399.23
Tar:		
Tar sold	$ 1,637.64	$ 927.50
Increase or *Decrease** in stock	**302.25*	187.05
	1,335.39	1,114.55
Less:		
Wages	$ 23.75	$ 6.75
Repairs & renewals, barrels, etc	26.07	119.45
	49.82	126.20
1043		
Net residual from tar	1,285.57	988.35
Total residuals	$ 17,863.50	$ 17,387.58

[*Words and figures in italic in red ink in copy.]

SCHEDULE "8."

Condensed Analysis of Repairs and Renewals Account.

For the Years 1905 and 1906.

	1905	1906
Salaries and wages	$ 1,268.90	$ 1,440.41
Tools, materials, etc	502.00	896.13
Hire of team	170.00	
Painting gas holder		168.71
Trays for refilling scrubber		374.80
Item paid by draft of which no particulars recorded		378.33
Total	$ 1,940.90	$ 3,258.38

SCHEDULE "9."

Condensed Analysis of Fittings Account.

For the Years 1905 and 1906.

	1905	1906
Salaries and wages	$ 6,004.09	$ 4,789.46
Materials and supplies	6,225.01	6,847.69
Reduction in stock	739.97	770.77
Total expense	$ 12,968.97	$ 12,407.92
1044		
Less:		
Receipts from sale of stoves, gas fittings and for making installations	$ 6,209.09	$ 6,464.09
Net expense	$ 6,758.98	$ 5,943.83

SCHEDULE "10."

Bonds Authorized and Issued.

Authorized.

Date.	No.	Value.	Int.	Period.	Amount.
Jan. 3, 1893.	75	$1,000 each	5%	20 years	$75,000.00

Issued.

Jan. 3, 1893.	40	$1,000 each	.....	.....	$40,000.00
July 1, 1896.	3	1,000 each	.....	.....	3,000.00
July 2, 1897.	5	1,000 each			
A. T. Averill.....			.....	.....	5,000.00
June 30, 1898.	5	1,000 each			
J. Thomas.....			$1,000.00		
A. T. Averill.....			$4,000.00		5,000.00
Jan. 1, 1901.	7	1,000 each			
J. Thomas.....			$1,000.00		
A. T. Averill.....			$6,000.00		7,000.00
May 27, 1903.	15	1,000 each	.....	.....	15,000.00
					$75,000.00

1045

SCHEDULE "11."

Bills Payable.

Year.	Liability January 1.	Acceptances.	Total.	Matured and paid.	Liability Dec. 31.
1897.....	$	2,400.00	2,400.00	2,400.00	.....
1898.....	.....	7,500.00	7,500.00	1,500.00	6,000.00
1899.....	6,000.00	2,500.00	8,500.00	4,500.00	4,000.00
1900.....	4,000.00	5,800.00	9,800.00	2,800.00	7,000.00
1901.....	7,000.00	5,000.00	12,000.00	6,000.00	6,000.00
1902.....	6,000.00	.....	6,000.00	6,000.00	.....
1903.....	.....	8,500.00	8,500.00	.....	8,500.00
1904.....	8,500.00	2,000.00	10,500.00	.....	10,500.00
1905.....	10,500.00	2,000.00	12,500.00	9,500.00	3,000.00
1906.....	3,000.00	34,000.00	37,000.00	6,000.00	31,000.00
1907.....	31,000.00	.....	.....	.....	.....

SCHEDULE "12."

Officials and Employees.

General Office, Distribution Shop and Works.

October 19, 1907.

General Office.

President, per month	$150.00
Vice president, per annum	50.00
Secretary, per month	200.00
Cashier and bookkeeper, per month	100.00
Assistant bookkeeper, per month	60.00
Stenographer, per month	75.00
Meter boy, per month	25.00
Meter readers (2), 6 days per month, per day	1.50

Distribution Shop.

Superintendent, per month	$ 83.33
Six shop men, per month	50.00

1046

Works.

Superintendent, per month	$ 83.33
Gas maker, per month	65.00
Engineer, per month	60.00
Fireman, per month	60.00
Four stokers, per month	60.00
Repair man, per month	50.00
Purifying man, per month	40.00
Teamster, per month	45.00
Coal shooter, per ton	.07

Street Gang.

Foreman, per month	$ 50.00
Four men, per day	1.75

Correction. Correct Exhibit M-2, page 513 of appellant's abstract by striking out the following:

	Purchased.	Sent to retort.
1905	17,980,000	16,702,950
1906	15,806,760	15,702,090
1906	31,786,760	32,405,040

and substitute in lieu thereof the following:

	Purchased.	Sent to retort.
1905	15,980,000	16,702,950
1906	15,806,760	15,702,090
	31,786,760	32,405,040

Correction. Correct Exhibit Q-2 at the bottom of page 639 of appellant's abstract, by striking out the following:

"5,589.90 - 91,331,000 - 6.50c per M ft."

"5,589.90 - 105,000,000 - 5-66c per M ft."

and substitute in lieu thereof the following:

1047 "$5,589.90 divided by 91,331,000 equals 6.50 per M ft.

$5,589.90 divided by 105,000,000 equals 5.66 per M ft."

Addition. Add at the close of the direct examination and before the words "Cross Examination," page 615 of appellant's abstract, the following:

"The defendants offer in evidence pages 386, 387 of the report of the United States Commissioner of Labor for the year 1899, the same being marked Exhibit R-2, said pages being as follows:

"During the course of the investigation complete statements as regards cost of production were secured from twelve plants, which are not included in the general tables owing to the fact that the officers were unwilling to furnish all the data called for by the schedule or inquiries used by the department. These twelve plants are located in twelve cities, and are owned and operated by as many distinct private corporations, but are all under a single control or supervision. The properties in each case have been acquired by purchase during the last twelve years. All of these plants appear to have been operated under exceptionally good management, and it is therefore interesting to know the results of the same. The various plants use all systems making coal, oil, and water gas. The facts relating to the twelve plants, combined as furnished to the Department, are presented in the statement which follows. The cost of these plants was approximately $10,000,000, this sum being divided among the various items as follows: Land, $1,000,000; buildings, $1,000,000; equipment within works, $2,000,000; holders, $1,000,000; mains, $3,800,000; meters, $1,000,000; and teams, tools and other accessories, $200,000.

1048 The general statement as to cost of production during the fiscal year considered is as follows:

General Expenses.

Salaries of officers, superintendents, clerks, etc.	$124,419.00
Office supplies and expenses	32,209.00
Insurance	5,070.00
Legal expenses and damages	3,310.00
Other	7,491.00
Total	$172,499.00
Wages	251,626.00

Materials and Supplies.

Fuel	$ 10,385.00
Materials used in manufacture	397,744.00
Other supplies	38,324.00
Total	$446,453.00
General distributing expenses	88,578.00

Maintenance.

Actual disbursements for repairs and renewals:

On works	$73,755.00
On mains	12,630.00
Other	30,739.00
Total for repairs and renewals	$117,124.00

Estimated Depreciation.

On buildings	$20,000.00
On manufacturing equipment	60,000.00
1049 On distributing system, meters and apparatus	70,000.00
Total depreciation	$150,000.00
Total maintenance	267,124.00

Total cost of depreciation—

Including depreciation	$1,226,280
Excluding depreciation	1,076,280
Taxes	81,565

Total cost of production and taxes—

Including depreciation	$1,307,845
Excluding depreciation	1,157,845

There were made during the year 3,176,646,900 cubic feet of gas, of which 152,784,513 feet, or slightly under 5 per cent., were lost by leakage, 3,996,900 feet were used at the works and offices, and 3,018,243,987 feet were sold. There were on hand at the beginning of the year 2,832,700 feet of gas, and at the end of the year, 4,454,200 feet. The total income for the year was $3,405,781, and the cost of production including taxes, depreciation, and interest on the investment at the average rate paid on the last issues of bonds in the cities involved (3.5 per cent.) was $1,657,845, leaving a net progt of $1,747,936 over and above the cost shown in the preceding statement. From these statements it is seen that the average cost of production in the 12 plants excluding depreciation, taxes, and interest on the investment at 3.5 per cent was 23 cents per 1,000 cubic feet of gas sold, and including the above mentioned elements, 42 cents per 1,000 cubic feet of gas sold. The amount received from the sale of residuals and by products has, of course, been deducted from the cost
1050 of production in the calculation of the average cost per 1,000 cubic feet of gas sold, as shown above.

If any comparison of cost of production be made between these twelve plants and any included in the general tables, or between any of the individual plants of those tables, it should be done with the most careful regard to the varying conditions of equipment, kind of gas manufactured, cost of fuel and other material and supplies, quantity of gas manufactured and sold, the conditions of distribu-

tion, etc. Comparisons of cost between plant and plant can not fairly be made without a study of all these facts which for the individual plants are shown in the general tables. It will thus be seen that no plant can be selected as representative of all or any large class, and that no amount of cost, either for the items or for the total, can be established as a criterion for other plants, speaking generally and without such study as has been indicated above."

"EXHIBIT S-2."

Exhibit S-2 is a Bristol recording pressure *guage* chart showing the pressure at the works November 30, 1907, showing the pressure ranging from 3 inches to about 5½ inches. The high pressure ranging from 8 o'clock a. m. to 2 p. m., and from 5 p. m. to 11 p. m.

Exhibit T-2 is a Bristol recording pressure *guage* chart showing pressure at the works Dec. 2, 1907, such pressure ranging from about 3¼ inches to 5½ inches. Pressure from 11 p. m. to 6 a. m. ranging at about 3 inches and from 9 a. m. to 12 noon, at about 5 to 5¼ and and from 5 p. m. to 10 p. m. pressure ranged from 5 to 5½ inches.

1051 "EXHIBIT W-2."

Exhibit W-2 is a Bristol recording *guage* chart, taken December 8, 1907, pressure remaining uniformly at about 5 inches from 6 a. m. until 11.30 p. m., then ranging from 3 to 5 inches.

"EXHIBIT Y-2."

Y-2 are 12 Bristol recording pressure *guage* charts, showing the pressure at the City Hall and other places. Three of the said exhibits are hereto attached. No. 1 of Exhibit Y-2 was taken at 627 Sixth avenue, December 2nd to 3rd, No. 2 of Y-2 was taken at City Hall October 2nd to 3rd, and No. 3 of Exhibit Y-2 was taken at the City Hall from October 1st to 2nd.

(Here follows blue print marked p. 1051*a*.)

MAPS

TOO

LARGE

FOR

FILMING

"EXHIBIT B-3.

Correction. Correct Exhibit B-3 on page 656 of appellant's abstract by striking out the following, over the second column of the second schedule shown on said page: "Of greatest illumination burner tap at point cu. ft. per hr. with" and substitute in lieu thereof the following:

"Cu. ft. per hr. with burner tap at point of greatest illumination."

"EXHIBIT D-3."

Correct Exhibit D-3, commencing at the bottom of page 657 and ending at the top of page 658 of appellant's abstract, by striking out all that part of the said exhibit after the words "Length of chimney in inches," and substitute in lieu thereof the following:

1052 *"Incandescent Gas Mantles.*

Van Rensselaer Lansingh before American Gas Institute, Oct 18, 1906; Progressive Age, Jan. 1, 1907.

40 mantles tested in four groups of ten mantles each with the following mean results for each group, as to initial candle power.

Tested at 1½ inches of water.

Group.	C. P.	Cu. ft. per hour.	C. P. per cu. ft.
1	93.0	4.55	20.5
2	64.4	4.25	15.4
3	72.2	4.18	17.4
4	88.0	4.52	19.5

Welsbach gallery burner with deck plate and mantle.

Tests of Incandescent Burner for maximum candle-power and maximum efficiency with different chimneys, at pressures of 1½ inches and 3 inches, in New York Electrical Testing Laboratories, for the Illuminating Engineer, as published in Journal *og* Gas Lighting, July 30, 1907, page 307.

Length of chimney, in inches.	Candle power per cubic foot per hour at maximum candle power. 1½ in. pressure	3	Candle power per cubic foot per hour at maximum efficiency. 1½ in. pressure	3
Straight	5⅞	23.0	19.5	24.0	22.4
	8	21.7	22.4	23.7	24.0
Air	5¼	19.6	19.2	21.9	21.3
1053					
Hole	6¾	20.3	20.0	21.5	21.7
	9⅞	19.0	20.5	21.3	21.6

Wherefore, Appellees pray that this denial of and amendment to appellant's abstract of the record may be considered upon this appeal.

REDMOND & STEWART,
F. C. BYERS,
JAMES W. GOOD,
J. W. JAMISON, AND
H. E. SPANGLER,
Attorneys for Appellees.

Certificate.

I hereby certify that the cost of printing the foregoing denial of and amendment to the abstract of the record is $356.56

JOHN M. REDMOND,
City Solicitor.

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1062 Service of the within further amendment to the Abstract of the record is accepted and copies received at Cedar Rapids, Iowa, the — day of December, 1908.

Attorneys for Appellant.

In the Supreme Court of Iowa, January Term, 1909.

In Equity.

CEDAR RAPIDS GAS LIGHT CO., Appellant,
vs.
THE CITY OF CEDAR RAPIDS, IOWA, Appellee.

Appeal from Linn District Court—Hon. F. O. Ellison, Judge.

John N. Hughes and Grimm & Trewin, Attorneys for Appellant.

Redmond & Stewart and F. C. Byers, James W. Good, J. W. Jamison & H. E. Spangler, Attorneys for Appellee.

Further Amendment to Abstract of Record.

1063 To further correct appellant's abstract of the record, and to more fully set out the testimony given at the trial thereof, and the exhibits offered and introduced in evidence at said trial, appellees further amend said abstract of the record in the following particulars, to-wit:

Strike from the sixth line on page 510 of appellant's abstract the following figures: $25,000 and insert in lieu thereof the figures, $2,500, making the same read: "I consider $2,500 working capital in view of the fact that they carry a large stock of material as being ample," instead of "I consider $25,000 working capital in view of the fact that they carry a large stock of material as being ample."

Add to the cross-examination of George McClean the following:

I would reinvest the amount set aside from depreciation in the business. I would expect it to earn the same returns as all capital invested in the plant. I do not know how long it would take to have that fund accumulate to equal the value of the cast iron pipe. I have never investigated it, and it makes practically no difference how long it would take. So with the office furniture. The amount set aside for depreciation, I would reinvest in the business and expect to earn a return on that. If I did not use this money, I would have to get it elsewhere. I don't know that if my figures for depreciation are taken and invested at the same rate which I say the money invested in the plant should earn that it would duplicate the plant every thirteen years.

At the end of Exhibit 14, top page 389, of appellant's abstract, add the following, being Exhibit 15 prepared by Col. Edward G. Pratt, and introduced in evidence by plaintiffs.

1064 EXHIBIT 15—1906.

Gas manufactured	100,764,000 c. f.			
Gas sold and used by meter	92,306,100 c. f.			
Gas unaccounted for	8,457,900 c. f.—9.16%			
Total receipts for sale of gas	82,306,100 c. f.	$86,593.78	1.0464 per M.	

Manufacturing.

			Cost per M. sold.	Cost per M. mfgd.
Expense:				
Superintendence	$2,200.00		.0218	
Gas used at works	1,115.39		.0116	
		3,315.39		.0334
Water gas:				
Oil	6,191.00		.0614	
Coke	2,703.00		.0268	
Labor	647.36		.0064	
		9,541.36		.0946
Coal gas:				
Coal	24,850.00		.3458	
Labor	7,001.57		.0634	
Supplies and misc'l exp.	570.97		.0056	
Purification labor	420.20		.0047	
		42,902.74		.4255
		55,759.49		.5537
Less residuals:				
Coke	16,288.23			
Tar	988.353			
		17,387.58		.1725
Total cost, less residuals		38,371.91		.3810

Distribution.

Distribution expense:			
Labor meter readers, sets and removals, arc l-mp. mince. grat. work, etc.	3,870.00	.0419	
Supplies and miscellaneous expense	612.58	.0066	
New business	1,501.50	.0162	
	5,984.08		.0649
Repairs and renewals:			
Repairs and renewals to mains, services and meters	1,422.84	.0154	
Labor, material	1,460.74	.0158	
Repairs to buildings and machinery	3,481.63	.0378	
	6,365.21		.0689
1065 General expense:			
Salaries of officers	3,000.00	.0327	
Salaries of accounting department	2,669.59	.0289	
General office sundries and misel. expense	1,024.82	.0111	
Office rent and lights	967.45	.0104	
Stationery, p't'g, postage	233.94	.0025	
And advertising	37.00	.0004	
Legal expense	10.00	.0001	

Taxes	2,150.36		.0232		
		10,093.26		.1093	
Total cost of distribution	22,442.55		.2430		
Cost of leakage	3,203.02		.0347		
Total cost of distribution including leakage		25,645.57		.2777	
Receipts from sale of gas (92,306,100 c. f.)					$86,593.78

			Cost per M. sold.		Cost per M. mfgd.
Total cost of manufacture	$55,759.49			.5937	
Less residuals	17,387.58			.1725	
Net cost gas in holder		38,371.91			.3812
Total cost distribution	22,442.55		.2430		
Plus leakage	3,203.02		.0347		
		25,645.57		.2777	.2777
Total cost manufacture and distribution		64,017.48			.6589
Receipts from gas sold (as above)		86,593.78			
Total cost manufacture and distribution (as above)	64,017.48		.6589		
Depreciation charged off	13,000.00		.1408		
Gross income, less depreciation		77,017.48		.7997	
		19,576.30			
Gross income—less depreciation (as above)	19,576.30				
Additions to income—rent from real estate	529.99				
		20,106.29		.0057	
Deductions from income:					
Interest on floating debt	948.67				
Interest on bonds	3,750.00				
		4,698.67		.0509	.8506 .849
Net income		15,407.62			
Net income (as above)		15,407.62			
1906					
Dividends paid from surplus		12,000.00			
		3,408.22			

Cost of gas in holder		.3812
Distribution		.2777
		.6589
Depreciation charged off	.1408	
Interest on bonds	.0509	
		.1917
Total cost		.8506
Add for profit—7% on $5.00 per 1,000 cu. ft. gas sold		.35
Price which company would be justified in charging		$1.2006

Wherefore, appellees pray that this further amendment to appellant's abstract of the record may be considered upon this appeal.

REDMOND & STEWART,
F. C. BYERS,
JAMES W. GOOD,
J. W. JAMISON AND
H. E. SPANGLER,
Attorneys for Appellee.

I hereby certify that the cost of printing this amendment and the abstract of the record is $7.00.

JOHN N. REDMOND,
City Solicitor.

1067 In the Supreme Court of Iowa.

Linn D. C. Record 28, page 216.

26405.

CEDAR RAPIDS GAS LIGHT CO., App'l'nt.
vs.
THE CITY OF CEDAR RAPIDS et al.

Appellant's motion to advance cause sustained, ordered that cause be submitted as the last case of the first period of the 1909 January Term of this court.

Linn D. C. Record 28, page 244.

26405.

CEDAR RAPIDS GAS LIGHT CO.
vs.
CITY OF CEDAR RAPIDS.

Appellant's motion to strike parts of appellee's Am. Abst. ordered submitted with case.

Linn D. C. Record 28, page 259.

26405.

CEDAR RAPIDS GAS LIGHT CO., App'l'nt.
vs.
CITY OF CEDAR RAPIDS et al.

Cause submitted on abstracts and arguments on file and oral arguments of counsel.

Linn D. C. Record 28, page 328.

26405.

CEDAR RAPIDS GAS LIGHT CO., App'l'nt.
vs.
CITY OF CEDAR RAPIDS et al.

It is ordered that the restraining order granted herein on the 19th day of February, 1908, be and it is hereby continued under
1068 the condition and stipulations therein contained, and the said trustee and said trust fund are hereby continued under the terms stated in said order for the term of thirty days, and if a petition for rehearing is filed herein within said thirty days, then the said restraining order, trustee and trust fund shall continue until the determination of said petition for rehearing, the appellees having leave to apply for additional bond for said trustee if they deem the same necessary.

Dated this 5th day of May, 1909.

(Signed) W. D. EVANS,
Chief Justice Supreme Court.

Linn D. C. Record 28, page 407.

26405.

CEDAR RAPIDS GAS LIGHT CO., App'l'nt.
vs.
CITY OF CEDAR RAPIDS et al.

Cause submitted on appellant's petition for rehearing, appellee's reply and motion for order after petition is ruled on.

1069 Filed May 4th, 1909.

In the Supreme Court of Iowa.

26405.

CEDAR RAPIDS GAS LIGHT CO., Appellant,

vs.

THE CITY OF CEDAR RAPIDS, IOWA, GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feieresen, and J. K. Starman, Aldermen, and with the Mayor Constituting the Council of said City, and H. S. Keffer, Recorder.

Appeal from the District Court of Linn County—F. O. Ellison, Judge.

Action to enjoin the enforcement of an ordinance fixing the price of gas resulted in a dismissal of the petition. The plaintiff appeals.

John N. Hughes and Grimm & Trewin, for appellant.
J. W. Good, J. W. Jamison and H. E. Spangler, for Appellee.

LADD, *J.*:

On Sept. 17, 1871, the City Council of Cedar Rapids granted W. H. Whitta & Co. the exclusive privilege for a period of twenty years of laying pipes for the conveyance of gas in all streets and alleys within its corporate limits; and, in consideration thereof, gas was required to be furnished at $5 per 1,000 cubic feet
1070 until the consumers numbered 200 when it should be reduced 50c, and, upon the increase of customers to 400, a dollar per M c. f. should be deducted and then to remain at $4 per M c. f. until the expiration of the grant, unless owing to some discovery or improvement the cost of production should be decreased; in which event, a corresponding decrease should be made in the price. Early in 1872, the plaintiff company was incorporated with a nominal capital of $150,000 and stock issued at par value of $100 per share. This was divided equally among the members of the firm, W. H. Whitta, George F. Wright and A. E. Swift. Nothing was paid for this stock save the assignment of the franchise obtained under the ordinance. In July of that year the purchase of ground upon which to place buildings was authorized and also the issuance of bonds to the amount of $25,000 bearing interest at 10 per cent. per annum, and on Jan. 17, 1873, the ground having been bought, the purchase was approved and a sale of the bonds at not less than 85c. on the dollar was directed. Out of the fund derived from this sale and other bond issues, in all not exceeding $75,000, and the income derived from the manufacture and sale of gas the plant has been constructed at an expense, as plaintiff alleges, of $267,500. An

annual dividend of 1% was declared in 1877 and the three years following, then a dividend of 2% in 1881 and 1882; 1% in 1883, 4% in 1884, 4% in 1896 and in 1897, 6%, the next year 7% and from that time on an annual dividend of 8% has been declared. This was not accomplished, however, by the original promoters. In 1874, A. T. Averill and associates acquired one half the stock for $16,000 out of which the sellers paid $15,000 of the bonds and the Higley Brothers owned the other one half. In 1877, Averill bought one fourth of the stock of one of the Higleys, discharged the superintendent and took personal charge of the plant "with the determination to either make it pay or blow it into the river" and to the efficiency of his management may be attributed in large measure, as the record before us clearly indicates, the results
1071 achieved. But the city afforded the opportunity for building up the enterprise which during much of its growth has paid a substantial income on stock consisting at the outset of nothing but water. In May, 1896 the City Council by ordinance, extended the company's franchise for a period of a few days less than twenty years with the condition that gas be furnished at $1.80 per M c. f. with a discount of 20 cents to consumers for prompt payment and other discounts for large amounts and to the city. The company voluntarily had reduced the price to $1.15 per M. c. f. with 10 cents additional in event of failure to make prompt payment and was selling as low as $.90 per M c. f. to a consumer of large quantities by Dec. 21, 1906, when the City Council enacted the ordinance of which complaint is now made in words following:

SEC. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c.) per thousand feet therefor, and no person, firm or corporation shall charge, exact or receive in excess of ninety cents (90c.) per thousand feet for gas supplied by them to any inhabitant of said city.

SEC. 2. Any person, firm or corporation, violating any of the provisions of this ordinance shall, upon conviction thereof, be punished by fine of not less than Ten Dollars ($10.00) or more than One Hundred Dollars ($100.00).

SEC. 3. This ordinance shall be effective from and after January 1, 1907.

SEC. 4. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

This action was instituted, promptly, praying that the city be enjoined from enforcing the ordinance. A temporary writ of injunction was issued but, on hearing, it was dissolved and upon appeal a restraining order*ed* entered by this Court on condition that all moneys exacted above the rate fixed be deposited with a designated trustee to bide the final decision. The power of the municipality to regulate the rates to be charged for gas, save that these
1072 may not be so reduced as to deny to the company a fair return upon the property used in the service of the public, is not questioned. The sole enquiry is whether the ordinance, if enforced, will operate to deprive the company of fair compensation for the

services to be rendered. The act of the municipality, in fixing rates, is purely legislative, and, as it is by virtue of authority given by the legislature, is presumed to have been in the proper exercise of the power conferred. Mayor and Aldermen of City of Knoxville v. Knoxville Water Co., 29 Sup. Ct. Rep. 148. For this reason the rate established by the ordinance assailed is presumed to be reasonable and this court, in enquiring whether this is true in fact, can only declare it otherwise upon finding that it is so low that its adoption will operate as a confiscation of plaintiff's property without due process of law.

Cedar Rapids Water Company v. City of Cedar Rapids, 118 Iowa, 234, 259. To enable us to ascertain this whether such will be the effect of this ordinance is apparent that three findings of fact are primarily essential as a basis for calculation: (1), What was the fair value of the company's plant at the date the ordinance was enacted. (2) How much gas was then being furnished consumers (3), What was the cost per M c. f. of gas, at that time, manufactured and distributed to consumers, with this date as a basis we shall be able to estimate the profits the plant will be likely to yield from sales of gas at the rate fixed in the ordinance, and, by comparison of these with the value of the property, determine as near as may be whether the return for the services rendered the public are so inadequate as to prove destructive of the company's investment.

II. The parties differ widely as to the value of the plant. These differences arise from estimates by witnesses as well as from the
1073 inclusion or exclusion of various elements which are said to effect values. There is no controversy, however, if we understand counsel rightly, but that the company is entitled to have its property appraised at its fair value in December, 1906. What such an enterprise was then worth cannot be determined by the mere addition of the separate values of its component parts, nor from the cost alone, nor from what it formerly might have been sold at if such price were influenced by excessive rates, nor from what it might cost to replace alone for this in view of its use would involve mere estimates of depreciation and contingencies incident to construction, but as was said in Smyth v. Ames, 169 U. S., 466; 42 L. Ed. 819, 449, "the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum, required to meet operating expenses are all matters for consideration and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be extracted from it for the use of a public highway than the services rendered by it are reasonably worth." This was said with reference to fixing rates for

common carriers but evidently is applicable to cases of this character and was applied in determining the reasonableness of water rates in Cedar Rapids Water Company v. City of Cedar Rapids, 118 Iowa, 234, 260. Any person or corporation contemplating the purchase of such a property quite naturally would inquire into its
1074 history, the character of its management in the past and the amount expended in its construction. The several items of dispute may be considered separately.

The witnesses for the company estimated that $25,000 would be required as working capital, aside from the supplies ordinarily carried, which included 1,000 tons of coal and 10,000 gallons of oil, but were unable to sustain their opinion save by dealing in probabilities for its use, in the main speculative. It appears that collections for gas sold are made monthly and as these amount to about $8,000 per month, it is evident that after the first month, enough would be on hand to meet current expenses. As supplies on hand were sufficient for immediate use and for some months in the future about all essential would be enough to take care of the pay roll for the first month and $2,500 would be ample for that purpose and other possible contingencies. Even this much appears to be more than the company in its experience has found it necessary to reserve. Also the sum of $100,000 was included by these witnesses as enhancement of value by reason of being a "going concern." As previously intimated, the value of the plant is to be estimated in its entirety rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management as contended by appellant. So too, there are the inevitable mistakes which would not be likely in the construction of a new plant. But to put a new plant in profitable operation time would be required and, aside from the intangible element of good will, the fact that the plant is in successful operation constitutes an element of value. As said the value of the system as completed, earning a present income, is the criterion. In so far as influenced by income, however, the computation necessarily must be made on the basis of reasonable charges for whatever is exacted for a
1075 public service in excess of this is to be regarded as unlawful. Save as above indicated the element of value designated a "going concern," is but another name for "good will" which is not to be taken into account in a case like this where the company is granted a monopoly. Cedar Rapids Water Company v. City of Cedar Rapids, 118 Iowa 234,262. Wilcox v. Consolidated Gas Co., 29 Sup. Ct. Rep. 192. The witnesses for plaintiff took into account "good will" in giving their opinion of the enhancement in value because of being a going concern and we have no means of separating these so as to ascertain their estimate of the separate advantage of completion so as to earn a present income. The buildings of the company are located on fractional block 9 divided into five lots and lots one and two in fractional block 10. All these lots front on first Street and border the Cedar River. The government meander line seems to have been from 33 to 57 feet from First Street though

the high water mark was about 100 feet nearer the river. The company by the construction of rip-rap work on made ground at the bottom of the stream has added about 50 feet more. Two of these lots cost the company $3,000 in 1902 and the others prior to that has needed $4,200. Of course the company has not acquired title to the portion of the lots beyond the high-water mark for though long in occupancy, the statute of limitations does not run against the state.

Park Commissioners v. Taylor, 133 Iowa, 453.
Carr v. Moore, 119 Iowa, 152.
Tomlison v. R'y, 32 Iowa, 106.

But the company is in possession and this was of value, especially as none save the state might challenge its right thereto. Without determining precisely where the high water mark is or reviewing the conflicting opinions of witnesses we are inclined to think the evidence fairly shows this property worth between $15,000 and $20,000.

Across the street from the plant are lots 1 and 5 in block 9, known as the "Annex" and on which there are 13 small houses, rented by the company. The cost of these lots was $6,500 some eight
1076 years prior to the trial. The plaintiff estimated that their value had increased to $16,500. On the other hand, the city contends that they should not be considered at all in determining the value of the plant. The evidence is all but conclusive that they will not be required for the immediate expansion of the works even though the officers of the company may have had this in contemplation. A witness for plaintiff testified that with little more machinery, the present plant could be made to manufacture more than three times as much gas as now sold. Another justified his conclusion that the annex should be included by saying that the purchase was a wise precaution and that in view of the past growth of the city, these lots likely would soon be needed. The lots or others may be required some time but no man can determine the contingencies of the future and it will not do to burden the patrons of to-day in order to provide for possible needs of those of five or ten years hence, at least when this is conceded not to be necessary in order to provide for equal facilities when demanded. This property should not be included.

The estimates concerning the value of the buildings varied from slightly more than $30,000 down to something less than $21,000. Witnesses called by plaintiff had enjoyed a larger experience while those produced by the defendant entered into greater detail. A comparison of the evidence in connection with proof of the age of the buildings has led to the conclusion that $25,000 is not far from their true valuation. We are of opinion that plaintiff's real estate, excluding the "Annex," was fairly worth not to exceed $40,000 to $45,000 or $15,000 or $20,000 less than estimated by the witnesses of plaintiff.

But little controversy has arisen in estimating the value of other

property for, save certain items the estimates of plaintiff's witnesses, have been accepted by the city.

Some purifyers were included which had been discarded. They were appraised at $1,600. These formed no part of the plant.
1077 If they were subsequently exchanged for something needed, this was long after the enactment of the ordinance.

In estimating the value of the cast iron mains, and pipes computation was made in behalf of the company at $32.50 per ton, a reduction being allowed from the price of December 1906 of $5.50 per ton for depreciation. The record indicates that the price taken was the highest at which mains and pipes had ever sold and that these ranged in previous years down as low as $18 per ton. The pipes were not available for the market and, in estimating their value in the ground, the price of iron on the particular day the ordinance was enacted ought not to be seized upon as the criterion of value, whether it were the highest or lowest price. No one in calculating on the value of similar plant would adopt such a rule. The cost of the pipe, the prices at which it ordinarily had sold in connection with present prices should be considered in connection with depreciation by inevitable decay. An examination of the record has convinced us that outside figures have been made by plaintiff's expert and that his estimate on the value of pipes and mains is several thousand dollars too high.

The company extended its activities so as to furnish gas to the people of Kenwood Park and Marion in 1905 and to do this laid a high pressure pipe from the holder to these places. The cost of this pipe to the city limits was $5483 and was originally charged to the Marion line. The evidence is to the effect that the pressure from this pipe somewhat reinforces the system and that a few residents of the city are furnished gas therefrom. But its principal use is to carry gas to the consumers beyond the city limits and no more than one fourth of its value should be included in the apprai-sement.

The sum of $43,580 was added owing to the alleged increase of value of pipes and mains because of being underneath the pavement.
The company had laid them before the paving was done but
1078 it is argued that as the value of the mains and pipes are to be estimated when in the ground what it would now cost because of the pavement to put them there should be included in determining present value. If so, the contingency of having to remove them at the expiration of the franchise also should be taken into account. Moreover the fact that most of the paved streets are paralleled by unpaved alleys or parkings in which pipes might be laid without removing the pavement and possibly with less danger from electrolysis is entitled to consideration. Nor is it to be forgotten that pavements yield to the ravages of time and that with new pavement new pipe may be laid. Undoubtedly the values of the pipes are somewhat enhanced because of their location but the entire immediate cost of opening and replacing the pavement is not the criterion for value which should be adopted. The contention illustrates how inequitable would be a rule arbitrarily fixing the value as that for which a system might be replaced. Aside from this being im-

practical, it may safely be said that there is hardly an enterprise of this character, which were it destroyed, would be restored as it was before. In ascertaining values in this way the worth of a new plant of equal capacity, efficiency and durability, with proper discounts for defects in the old and depreciation for use, should be the measure of value rather than the cost of exact duplication.

Included in plaintiff's estimate of values are interest on capital during construction, $22,415; promotion and organization, $14,943.69 and engineering, $18,679.61. These are mere estimates of what might be expended for these purposes in construction of a new plant. Of course all the money required would not necessarily remain idle during construction and the witness admitted that the only expense for promotion and organization he could think of would be attorney's fees in preparing proper papers. The expense for engineering was said to be the percentage taken into consideration by those contemplating such enterprises. Manifestly
1079 these estimates are largely speculative. Nothing can be allowed for the promotion and organization of the company for it is immaterial by whom the plant may be owned in estimating its value.

Some other matters are discussed which do not require special attention. The plaintiff's chief expert estimated the physical properties to be worth $365,564.41 and the petition alleged these to be $368,000. The defendant conceded the value of the plant to be $278,621.60. It had cost but $267,500. It had been assessed for taxation on the sworn statements of its president in 1903 at $99,020, in 1905 at $95,300 and in 1906 at $175,000, raised to $250,000 by the board of equalization from which the company appealed as to any valuation above $108,000. In the five years prior to 1907, the company had charged off its books $65,500 for depreciation in value. And yet, notwithstanding the small value of the land, relatively, how marvelously has this property consisting of machinery, pipes, mains and the like advanced in value notwithstanding the constant depreciation due to the combined forces of adolescence, absolescence, inadequacy and decay! An examination of the record has convinced us that the witnesses of the plaintiff have overlooked nothing which might tend to enhance their estimates of the value of the plant and that, in many instances their estimates are exaggerated. Undoubtedly, risks have been incurred and possibly mistakes have been made. Doubtless the purpose in fixing the high rates in the first ordinance was to compensate for these risks. Owners of such property on the one hand ought not to be excluded from the advantage of the prudence and foresight in its development nor on the other should they be relieved of the consequences of mistakes and errors of judgment. At best, what a thing is worth, is peculiarly a matter of opinion and opinions of this kind ordinarily are as numerous as the witnesses who express them. A careful review of the entire record which has been repeated has led to the
1080 conclusion that a fair valuation of the entire plant is somewhere between $300,000 and $350,000. This is largely in excess of its cost but according to the record, the value of material

as well as the cost of labor has greatly increased since much of the plant was constructed. On the other hand, to put the value above the limit mentioned would require us to ignore the depreciation due to age, decay inadequacy and the like on account of which defendant has been charging off its books large sums and which the proof shows should be taken into account.

III. In 1905, the company sold 76,782,600 cubic feet of gas in 1906, 91,173,200 cubic feet and in 1907, 103,079,190 cubic feet. The evidence is to the effect that reduced prices increase the consumption so that the last amount safely may be assumed as the minimum amount that will likely be sold hereafter. This computed at 90c. per M c. f. gives the gross annual income as $92,771.10.

Undoubtedly some deduction should be made for bad debts but according to the evidence an allowance of $.008 per M c. f. will cover this item. The amount collected from each of the 4000 consumers of gas is relatively small. Under the former ordinance 10c. per M c. f. was exacted in event of failure to pay by the 10th of the month. The ordinance assailed fixes a level price and appellant contends that the elimination of the discount for prompt payment will entail an expense of 5c. per M c. f. for collecting gas bills. This assumes that an equally efficient method of inducing payment may not be adopted by the company. That such corporations may adopt rules and regulations for the transaction of their business is well settled by authority.

> Shephard v. Gas Light Company, 6 Wis., 539; 70 Am. D. 479.
>
> Tacoma Hotel Company v. Tacoma Water Company, 3 Wash 797; 14 L. R. A. 669.
>
> Harbison v. Knoxville Water Company, 53 S. W. (Tenn.) 933.
>
> Williams v. Mutual Gas Co., 18 N. W. (Mich.) 236.

In each of these cases a rule requiring security or deposit of money in advance was approved. Of course such rules must be reasonable and not impose an undue burden on the consumer.

1081 In People v. Manhattan Gas Light Company, 45 Barb. (N. Y.) 136 a rule that the company would refuse to furnish gas to one who had failed to pay his past due bill was held to be reasonable but in Crumley v. Water Co., 99 Ten. 420; 41 S. W. 1058 it seems to have been held that a water company may not refuse to furnish water on the ground that the applicant is indebted for a previous supply for which he is unable or refuses to pay. To the same effect see, Gas Light Company v. Colliday, 25 Md. 1. In American Water Works Company v. State ex rel. Walker, 64 N. W. (Neb.) 710 the rule required water rents to be paid on the first days of January and July of each year in advance at the company's office and "if not paid within 30 days after they fall due the water will be turned off and not turned on until all back rents are paid, increasing the charge by $1.00 for turning water on and off." The court, while conceding the power of the company to make all reasonable regulations, held that that part of the rule exacting $1.00 as a condition precedent to turning on again unreasonable and void. See also State

v. Neb. Tel. Co. 17 Neb. 126; 22 N. W. 237. In Water Company v. Adams, 24 Atl. (Me.), a rule that users of water liable for rent for the whole year whether actually used for the length of time but not requiring them to pay in advance was held to be unreasonable. In Shephard v. Gas Light Co. supra, the court held that the company might not attach a penalty for the violation of its rules. In State v. Butte City Water Company, 56 Am. St. 574 — decided that payment in advance might be exacted but that the company could not refuse to furnish water to others than owners of property. In Miller v. Wilkesbarre Gas Co. 206 Pa. St. 254; 55 Atl. 974 a rule that supply be stopped unless all arrearages be paid whether owing by tenant in possession or his predecessor was approved but held not to be binding in the absence of notice. In Owensboro Gas Light Company v. Hildebrand, 42 S. W. 851, a rule requiring the deposit of $20 in advance was declared reasonable. To the same effect see Northem-
1082 Colorado, Etc. Co. v. Richards, 22 Colo., 450; 45 Pac. 423 W. See also Thornton on Oil & Gas Sec. 541 where decisions are collected relating to the reasonableness of amounts required to be deposited in advance. The company may not base a rule on the theory that the people as a whole are dishonest but it has the right to adopt a rule which, while giving the honest citizen what he pays for will prevent the dishonest from getting that which he will never pay for. See Harbison v. Knoxville Water Co., supra. That the company may establish a rule exacting payment in advance in reasonable amounts or the deposit of security, at least, is fully settled by the authorities and it would seem that the requirement of security or deposit of money in advance would be quite as effective in enforcing prompt payments, and more so in avoiding bad debts than an increase in price upon failure to pay by a time stated and it does not appear that collecting through such method or some other reasonable method that may be devised not obnoxious to the ordinance would entail greater expense on the company than under that of allowing discounts. At any rate, we cannot assume in advance that consumers will not comply with such reasonable rules for the security of the company as may be embodied in their contracts nor in the absence of satisfactory proof that unusual expense will be incurred in collecting the price of the gas sold.

III. What does it cost to manufacture and distribute gas per M c. f. to the consumer? The witnesses have estimated these separately, in the first including the expense up to storing in the holder and in the last all other items in delivering to and collecting the price from the consumer. They do not differ very materially on the cost of the several items but are not entirely agreed as to what shall be included. Several persons of large experience testified on the subject but necessarily where the business of a company is well managed and its accounts fairly kept these furnish the best evidence
1083 of the cost of service rendered the public. The representatives of two accountant companies examined the books of plaintiff, the Audit Company of Illinois represented by George P. Kellogg for it and the Marwick and Mitchell Company of Chicago represented by J. W. Hall for the city. They agreed that the books

were fairly kept and there was little difference between them in their deductions therefrom save in the items making up the account. The one included $10,000 for depreciation in 1905 and $13,000 for 1906 while the other computed depreciation at $.05 per M c. f. of the gas made being $4431.71 for 1905 and $5330.82 for 1906. Their computations were made by including all the expenses for the year including depreciation as above and deducting therefrom the amount received for residuals, such as coke and tar, and dividing the difference by the number of M c. f. of gas manufactured less leakage. The quotient, of course, would be the cost of the manufacturing and delivering 1000 cubic feet of gas. In this way, plaintiff's accountant found that the cost per 1000 c. f. in 1905 was $.756 and in 1906, $.799. According to the defendant's accountant the cost for 1905 was .6745 per M c. f. and for 1906, $.6812. As said, these different conclusions as to 1905 and 1906 resulted from some differences in the items included to which attention is now directed. The cost of mixed gas (that is of coal and water gas) in the holder for 1905 was found by plaintiff's accountant to be $.394 and in 1906, $.415 per M c. f. while defendant's accountant made such cost $.3868 in 1905, $.4111 in 1906. This slight difference is mainly due to the charge of plaintiff's accountant of $1 per M c. f. for gas used at the works, while defendant's accountant allowed the actual cost. The latter was correct for in ascertaining the cost of manufacture that used to accomplish this should be computed at the cost only. The defendant's accountant very properly excluded in allowance for taxes on the "Annex." It appears that the company had charged off
1084 its books as depreciation in the value of its property to use the following sums:

$10000 in 1902.
$20000 in 1903.
$12000 in 1904.
$10000 in 1905.
$13000 in 1906.

In computing the expense of distribution the plaintiff's accountant, as said, included these items, while the defendant's accountant allowed for depreciation of property 5c. per M c. f. of gas manufactured. This would make a difference in manufacturing and distributing gas sold in 1905 of $.0714 per M c. f. and in 1906 of .0816. There can be no doubt as to the justice of some allowance for depreciation. A public service corporation is under no obligation to sacrifice its property for the public good. Nor is it bound to see its property gradually wasted by wear and decay without making provision for its replacement. It is entitled to earn enough not only to meet the expenses of current repairs but also to provide means for replacing the parts of the plant when these can no longer be used. "It is entitled to see that from its earnings the value of the property is kept unimpaired, so that at the end of any given term of years the original investment shall remain as it was at the beginning. It is not only the right of the company to make such provision but it is its duty to its bond and

stock holders and, in the case of a public service corporation at least, its plain duty to the public. If a different course were pursued the only method of providing for displacement of property which has ceased to be useful would be the investment of new capital and the issue of new bonds or stock. This course would lead to a constantly increasing variance between present value and bond and stock capitalization—a tendency which would inevitably lead to disaster either to the stock holders or to the public or both." This situation ought not to be brought about either by the payment of excessive dividends or the omission to exact proper prices for the output.

1085 Mayor, etc., of Knoxville v. Knoxville Water Co., 29 Sup. Ct. Rep. 148.

There is a wide divergence of opinion as to the amount that should be set aside for depreciation but all the witnesses concede that their estimates are without data as a foundation, though the elements to be taken into account are enumerated. As contended scarcely two parts of the plant will cease to be useful at the same time. Some will last but a brief period while others may be serving their purposes for more than a century to come. Some stress is put on the possibility of enlargement and of the necessity of replacing parts with others adequate to meet increased demands but there is no reason to think that the income will not keep pace with the extensions or enlargements. In other words profits on the additional sales of gas will in all probability yield, an adequate income on the amounts expended for the expansion of the plant. Should replacement of some of the machinery now in use prove necessary because of new inventions this in all probability, will be owing to the economy which may be effected thereby in production and again the saving may be expected to yield a fair return for the new investment. Moreover the rate fixed by this ordinance is not necessarily perpetual but subject to such change by the governing board of the city as shall be essential to meet the contingencies of the future. The expert accountant who testified in behalf of defendant allowed 5c. per M c. f. of gas manufactured for depreciation and another who had made a study of the durability of different material, testified that if 1.7 per cent of the value of the plant were put into a sinking fund drawing annual interest at 4 per cent per annum this would produce enough to replace the plant in 30 years. The amount allowed by the accountant approximates this percentage of the value and we are of opinion that in view of the evidence adduced it will prove adequate for replacement of the different portions of the plant when this shall become necessary. Ap-

1086 pellee insists that the average cost during the past five years should be adopted. This, including depreciation, would be $.6404 per M c. f. Another item is not to be overlooked and that is the probability that in the future the company, in view of this investigation, will be required to pay its just proportion of the burden of taxation. What the increase shall be, cannot be told in advance but it — likely to be enough to offset any decrease in the cost of fittings. The cost of gas production during the years

1905 and 1906 was much higher than for the years previous. This was not owing to the increased cost of fuel. The accountant of defendants testified that the cost of manufacturing and distribution, including allowance for depreciation, was $.57 per M c. f. in 1902, $.5935 in 1903, $.6375 in 1904. This increase in cost was due in large part to the increase in the fittings account, such as installing stoves, meters and the like. In 1902, there was a profit in this account of $283.99, in 1903, an expense of $972.80, in 1904 an expense of $39.60, in 1905 of $6758.89 and in 1906 of $5943.83. This increase of expense of fittings, etc., over profits on the sale of stoves, etc., is not satisfactorily explained.

There is no reason for thinking so large an outlay as in the last two years will be required in the future and the probable increase therein may safely be allowed to offset probable increase in taxes. Upon an examination of the entire record, we are satisfied that the cost of manufacturing, distribution and of making collections should not exceed $.6812 per 1000 cubic feet at the time the ordinance was enacted.

IV. The expense involved in the manufacture and sale of gas in 1907, including depreciation then was $70217.54. This deducted from the probable receipts leaves a net profit for the year of $22553.56. This is $1153.56 above 8% on the cost as alleged by the company. It is $1553.36 in excess of 7% if the plant be estimated at the valuation of $300,000 or a like sum above 6% if it is worth $350,000. If to these several margins be added the difference in the rates mentioned and that paid on the $75000 of bonded indebtedness the first of these will be increased by $2250, the second by $1500, and the third by $750. In other words, if the interest on the money borrowed be deducted from the profits, there will remain $18803.56 net income realized on a net investment of $192,500 or on a net value of $225,000 to $27500 or a return of 7 or 8 per cent per annum on the value of the plant over the incumbrance. It may be that the margin is not large in view of the contingency of increased cost of collections and the risks incident to all enterprises of this kind. But we are not fixing the rates. That is purely a legislative function. The court's duty ends when it has found that the rates are not so low as clearly to be confiscatory in character. "Judicial interference should never occur unless the case presents, clearly and beyond all doubt, such a flagrant attack upon the rights of property under the guise of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use."

1087

San Diego Land & Town Lot Co. v. National City, 174 U. S. 739; 43 L. Ed. 1154. What compensation will be reasonable is a question of fact to be determined in the light of the evidence in each particular case. No court of last resort has undertaken to say what percent. on the value such an investment should yield its owners in all cases. In Cedar Rapids Water Co. v. Cedar Rapids, 118 Iowa, 234, 263, the court said: "The net earnings upon this showing, if not large, are substantial. The court cannot undertake to guaranty

the company any fixed or certain return upon its investment. The exercise of such a power would work an utter destruction of the legislative right to regulate rates of water companies and
1088 other corporations operating works of public utility. We think the decisions have already gone to the verge of safety in nullifying legislative acts of this character; and to go farther and say that the courts will not only preserve property from confiscation and destruction by legislative power but will also assure to its owners a definite and fixed rate of profit upon their investment, would be an act of judicial usurpation." In that case, the value of the plant was estimated from $400,000 to $500,000 and rates yielding an income of 5½ per cent. on the former sum or 4½ per cent. on the latter were held not to be confiscatory, the court remarking that the "estimate of earnings may be very materially reduced, or the estimate of the value of the plant be very materially increased before the court will be justified in saying that plaintiff's property is being exposed to destruction or confiscation by an unprofitable schedule of rates." In Mayor etc. of the City of Knoxville v. Knoxville Water Co. 29 Sup. Ct. Rep. 148, the court, after reviewing former opinions concluded that "under any aspect of the evidence the company is certain to obtain a substantial net revenue under the operation of the ordinance. The net income in any event would be substantially 6 per cent. or 4 per cent. after an allowance of two per cent. for depreciation. See Staislans County v. San Joseph, etc. Irrigation Co., 192 U. S. 201; 48 L. Ed. 406. We can not know clearly that the revenue would not much exceed that return. We do not feel called upon to determine whether a demonstrated reduction of income to that point would or would not amount to confiscation. Where the case rests, as it does here, not upon observation of the actual operation under the ordinance but upon speculation as to its effect, based upon the operation of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of the return which would save the effect of the ordinance from confiscation. It is enough that the whole case leaves us in grave doubt."

1089 In Staislans County v. Irrigation Co., cited, it was remarked concerning an irrigation canal that "much of the capital was invested between twenty and thirty years ago, and to be able still to realize 6 per cent. upon the money originally invested, is more than most people are able to accomplish in an ordinary investment and more than is necessary in order to give just compensation for property at the time it is used for the public purpose originally intended." In Wilcox v. Consolidated Gas Company, 29 In. Ct. Rep. 192 the court after observing that "there is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested" concurred in the finding of the trial court that, in view of the facts proven "complainant is entitled to 6 per cent. on the fair value of its property devoted to public use." When government bonds bearing 2 per cent. annual interest are selling at a premium, and those issued by state or municipalities at little if any more than double

such rate are in demand, and when the current rate of interest on "gilt edge" securities on real estate or public service corporations rarely exceed 5 per cent., it will not do for the courts to say that the income, above all expenses, including taxes, on property devoted to the public service, must necessarily much exceed the last mentioned rate to avoid the charge of being confiscatory. What such plants usually earn unless this be based on reasonable charges can not be accepted as a criterion for usually the rates are all the tariff will bear. Possibly the plant should earn a return equal to the interest paid in the community on investments equally permanent in character but what this was is not disclosed by the record. The rates fixed by the ordinance are likely to yield enough above 6 per cent. per annum on the present value of the plant to cover contingencies which may not have been taken into account and in view of the fact that effect of the ordinance is largely speculative we are not
1090 inclined to interfere with its operation. If upon a fair trial it shall appear that under the new schedule the rates are not sufficiently remunerative, a remedy may be applied. The function of fixing compensation for public services should be exercised with a keen sense of justice on the part of the regulating body. The company should aid therein by a frank and full disclosure of its affairs. When so approached on either side, it would seem that rates might be settled upon which on the one hand, would not dampen the zeal to furnish the best service and extend the plant as the needs of an advancing municipality shall require nor, on the other hand, extract from the people more than fair compensation for the service received. Should the ordinance, after being put in operation and given a fair test, be found to deprive plaintiff of a fair return on its investment, it ought not to be deprived of the opportunity of again presenting the matter in court. For this reason, the petition will be dismissed without prejudice to such action. As so modified the judgment is affirmed.

1091 Supreme Court of Iowa, State of Iowa, *ss:*

Be it remembered, That on the 4th day of May 1909, the following proceedings, among others, were had in the Supreme Court of Iowa, to wit,

No. 26405.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant,
vs.
THE CITY OF CEDAR RAPIDS, et al.

Appeal from Linn District Court.

In this cause, the Court being fully advised in the premises, file their written opinion affirming the judgment of the District Court with modification.

It is therefore considered by the Court that the judgment of the

Court below be and it is hereby affirmed, with modification as stated in the opinion, and that a writ of procedendo issue accordingly.

It is further considered by the Court that the appellant pay the costs of this appeal, taxed at $572.31 and that execution issue therefor.

I hereby certify that the foregoing is a full, true and complete copy of the judgment entry of said Court in the above entitled cause, as full, true and complete as the same remains on file and of record in my office.

In testimony whereof, I, H. L. Bousquet, Clerk of the Supreme Court, have hereunto subscribed my name and affixed the seal of said Court, at Des Moines, this 22nd day of November A. D. 1909.

H. L. BOUSQUET, *Clerk*,
By —— ——, *Deputy*.

1092 In the Supreme Court of Iowa.

Record 28, Page 431.

THE CEDAR RAPIDS GAS LIGHT CO., Appellant,
vs.
THE CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, Mayor; E. A. Sherman, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen, and H. S. Keffer, Recorder, Appellees.

Final Judgment and Decree.

Whereas on the 4th day of May 1909 this court by written opinion filed herein, modified the decree and judgment of the District Court of Iowa in and for Linn County in this cause, dismissing plaintiff's petition and entering judgment against the plaintiff for costs, to the extent that said dismissal was without prejudice to the right of plaintiff to bring a new action, as in said opinion provided, and affirmed said decree and judgment as thus modified and entered judgment in the following words:

"Be it remembered, That on the 4th day of May 1909, the following proceedings, among others, were had in the Supreme Court of Iowa, to-wit:

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant,

vs.

THE CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, Mayor; E. A. Sherman, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen, and H. S. Keffer, Recorder, Appellees.

Appeal from Linn District Court.

In this cause, the court being fully advised in the premises, file their written opinion affirming the judgment of the District Court, with modification.

It is therefore considered by the Court that the judgment
1093 of the Court below be and it is hereby affirmed with modification as stated in the opinion, and that a writ of procedendo issue accordingly.

It is further considered by the Court that the appellant pay the costs of this appeal, taxed at $572.31 and that execution issue thereof;" and

Whereas said modification is, as follows:

"It is ordered, adjudged and decree, that the dismissal of said petition is without prejudice to the right of the plaintiff to maintain an action in the future to restrain the enforcement of said ordinance, if, after the same has been put in operation and given a fair test, it is found to deprive plaintiff of a fair return upon its investment;" and

Whereas, on the 19th day of February, 1908, while this cause was pending in this court an order was entered restraining the enforcement of said Ordinance No. 752, fixing the price to be charged by plaintiff for gas at 90¢ per thousand cubic feet, pending the appeal, but requiring the difference between the amount collected by said appellant and the said ordinance rate to be impounded in the hands of one, E. M. Scott, as Trustee, to abide the termination of the suit which order was continued on the 5th day of June 1909, until further order of this court; and

Whereas, on or about June 2d, 1909, a petition for rehearing was filed herein which, was provided by the rules of this court, suspended the execution of said judgment until the final determination of said petition for a rehearing, and at the time of the submission thereof, there was submitted to the court an application of plaintiff for an order continuing said restraining order entered February 19, 1908, and the extension thereof granted June 5, 1909, during the pendency of a writ of Error to the Supreme Court of the United States.

Now Therefore, It is ordered, adjudged and decreed that the said petition for a re-hearing is overruled, at appellant's costs, taxed at $—; to all of which appellant except.

And it appearing that appellant has shown that it in good faith intends to sue out a Writ of Error from the United State
1094 Supreme Court to this court, that this cause may be removed thereto for its judgment thereon and that irreparable

injury will result to appellant unless the status quo is preserved during the pendency of said Writ of Error in said court. Now in order to preserve the status quo, it is ordered that the said E. M. Scott, Trustee, aforesaid retain all of the said funds now in his hands or which may have been paid into his hands under the provisions and terms stated in said order of the court, and orders extending and continuing the same.

And it is further ordered that the Cedar Rapids Gas Light Company, plaintiff pay into the hands of said Trustee on or before the 3d day of each month hereafter, all money collected by it in excess of the 90¢ rate provided in said Ordinance No. 752, for gas sold in Cedar Rapids. The said Money shall be paid into the hands of said Trustee under the provisions of, and to draw interest at the same rate and to be distributed upon final determination of this cause in the Supreme Court of the United States, or otherwise, in the same way as provided by the said restraining order dated February 19th, 1908, and the extension thereof dated June 5, 1909. The said Trustee shall execute a new bond for the faithful discharge of the trust herein and now imposed, to the City of Cedar Rapids and the plaintiff in the sum of $50,000.00.

It is further ordered, adjudged and decreed that upon a final determination of said cause in the Supreme Court of the United States in favor of the plaintiff in error therein, the said Trustee shall return the said sums of money so deposited with him, with the interest accumulated thereon, to the said plaintiff in error, and that in the event that said cause is affirmed on said Writ of Error by the Supreme Court of the United States, the said Trustee shall distribute said money to the patrons of the Company in the respective amounts that have been collected by said appellant in excess of the 90¢ rate, from each of its patrons in Cedar Rapids, together with accrued interest thereon at the rate of 4% per annum, or as may be otherwise ordered by said court.

It is further ordered, adjudged and decreed that this
1095 order shall stand for the period of ten days from and after the rendition of this judgment and decree, and in the event that within said time the appellant shall sue out a writ of error in this cause from Supreme Court of the United States to this court, it is ordered and decreed that the foregoing restraining order, and the said previously granted restraining orders, be and are hereby continued in force until the final determination of this cause in the Supreme Court of the United States, or until it is otherwise ordered by said court, or a justice thereof.

(Signed) W. D. EVANS,
Chief Justice.

1096 In the Supreme Court of Iowa.

In Equity.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant, Plaintiff in Error,
vs.
CITY OF CEDAR RAPIDS, IOWA, GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen and with the Mayor Constituting the Council of said City, and H. S. Keffer, Recorder, Appellees, Defendants in Error.

Petition for Writ of Error.

To the Honorable Wm. D. Evans, Chief Justice of the Supreme Court of the State of Iowa:

The petition of the Cedar Rapids Gas Light Company respectfully shows: That heretofore upon the 30th day of January, 1908, there was tried in the District Court of Iowa in and for Linn County accuse in which the above named appellant was plaintiff and the above named appellees were defendants. The petition of plaintiff in said cause was a petition in equity asking that a certain ordinance of the city of Cedar Rapids passed by its council on the 21st day of December 1906, and which ordained that "Any person, firm or corporation supplying gas to the inhabitants of the city of Cedar Rapids, shall charge not to exceed ninety cents (90¢) per thousand feet therefor, and no person, firm or corporation, shall charge, exact or receive in excess of ninety cents (90¢) per thousand feet for gas supplied by them to any inhabitant of said city. Any person, firm or corporation, violating any of the provisions of this ordinance shall, upon conviction thereof be punished by fine of not less than ten or more than one hundred dollars. This ordinance shall be effective from and after January 1st, 1907," be declared
1097 and decreed void and its enforcement perpetually enjoined, because such price therein named was unreasonably low and would not allow plaintiff to earn a fair income or any income upon its property invested in its gas plant and used in the public service.

The said petition also alleged that the said ordinance if enforced would work a reduction of more than twenty-five per cent of plaintiff's gross income and earnings from its patrons and consumers of gas and would cause and require the plaintiff to operate its said plant and works at a loss to itself and to its stock-holders and would deprive the plaintiff of a reasonable income, and of any income upon the capital and money invested in the said gas plant and that said ordinance is unreasonable, unjust and ought not to be enforced.

Said petition also alleged that the proposed ordinance passed by the defendants as above set forth, on the 21st day of December, 1906, fixing the rates to be charged for gas by the Cedar Rapids Gas Light Company, is in violation of section One of the Four-

teenth Amendment to the Constitution of the United States, in that if enforced, it will deprive plaintiff of the equal protection of the law, and of its property without due process of law and without compensation therefor, by depriving plaintiff of earnings sufficient to pay dividends or compensation upon its investment.

Said petition further alleged that said ordinance passed December 21st, 1906, if enforced, is in violation of Section Ten (10) Article One (1) of the Constitution of the United States, in that it impairs the obligation of existing contracts between the plaintiff and defendant City of Cedar Rapids, as in said petition set forth and stated.

1098 Said petition further alleged that the said Cedar Rapids Gas Light Company is a corporation organized and existing under the Laws of the State of Iowa, and that the said City of Cedar Rapids is a municipal corporation organized and existing under the Laws of the State of Iowa, and that the said George S. Lightner, is Mayor of said City, and that Charles H. Campbell (impleaded as C. H. Campbell), William H. Stepanek (impleaded as W. H. Stepanek), James H. Hughes (impleaded as J. H. Hughes), Wallace G. Rowley (impleaded as W. G. Rowley), Edward W. Winter (impleaded as E. W. Winter), William W. Post (impleaded as W. W. Post), William C. Byers (impleaded as W. C. Byers), Frank W. Barta (impleaded as F. W. Barta), Dominic Feiereisen (impleaded as D. Feiereisen) and John K. Starman (impleaded as J. K. Starman), are the Aldermen of said City and with the Mayor constitute the Council of said City and that Henry S. Keffer (impleaded as H. S. Keffer), is Recorder of said City.

That the said petition was upon said trial by said court dismissed, and all relief prayed and asked therein denied and judgment and decree entered dismissing plaintiff's petition with costs; whereupon said plaintiff took an appeal to the Supreme Court of Iowa, that being the highest court of Law or equity of the said state in which a decision could be had in said case, and assigned therein as error that:

1. The court erred in holding that if the appellant would receive, under 90c. ordinance any compensation for the use of its property the ordinance is valid.

2. The court erred in holding that it did not constitute a taking of appellant's property without the process of law and with-
1099 out just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business, and in the service of the public.

3. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

4. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c. per thousand cubic feet deprives appellant of a fair and reasonable return upon its property used in the service of the public.

5. The court erred in not holding that the ordinance is void,

because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service. And that depriving it of said income was in effect a taking of its property for public use without compensation therefor.

6. The court erred in not holding that the ordinance fixing the 90c. rate is in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

7. The court erred in not holding that the ordinance is a violation of Section 18 of Article One of the Constitution of Iowa, because it is a taking of the private property of the appellant without just compensation.

8. The court erred in not holding that the ordinance fixing the rate of 90c. is a violation of Section 21 of Article One of the Constitution of Iowa, and of Section 10 of Article One of the Constitution of the United States, because said ordinance impairs the obligation of contracts between the appellant and the City of Cedar Rapids.

1100 9. The court erred in not finding from the whole of the evidence in the case that 90c. per M c. f. for gas would not enable appellant to earn fair and reasonable compensation upon its property.

10. The court erred in finding that the evidence failed to show that the rate of 90c. per M c. f. for gas fixed by Ordinance No. 752 is unjust and unreasonable.

11. The court erred in finding from the whole of the evidence that the ordinance fixing the 90c. rate for gas is not confiscatory in its effect.

12. The court erred in finding that the rate of 90c. per thousand for gas, is just and reasonable.

13. The court erred in holding that the rate ordinance in controversy enabled appellant to earn a fair compensation upon its property.

14. The court erred in dismissing appellant's petition and entering decree and judgment against appellant and in favor of appellees.

15. The court erred in refusing to hold that the ordinance fixing the rate for gas at 90c. per thousand feet was a violation of the Fourteenth Amendment to the Constitution of the United States, because it deprives appellant of its property without due process of law and without just compensation, and denies to appellant the equal protection of the law.

And your petitioner alleged and contended by said petition and upon said trial in said trial court as well as in the Supreme Court that the said ordinance was in violation of the constitution of the United States as therein stated and each of said allegations in the said District Court and each of said errors assigned in said Supreme Court raised and presented a Federal question in said case, namely:

1101 First. Whether the said ordinance fixing the rate to be charged for gas at 90c. deprived appellant of its property

without ue process of law, and was in effect the taking of plaintiff's property for public use without due process of law.

Second. Whether the said ordinance fixing the rate to be charged for gas at 90c. deprived the appellant of the equal protection of the law.

Third. Whether the said ordinance fixing the rate to be charged for gas deprived appellant of its property without compensation therefor.

Fourth. Whether the said ordinance fixing the rate to be charged for gas was an impairment of the obligations of contracts existing between the appellant and the City of Cedar Rapids, being the franchises granted by said city to appellant and under which it was acting.

Fifth. Whether the said ordinance fixed a price for gas so low that it amounted to a confiscation of plaintiff's property.

At the January term of 1909 of the Supreme Court of Iowa, the complaint made by said assignment of errors and its accompanying record came on to be heard and was argued in said Supreme Court, which court rendered its final judgment thereon affirming the judgment of the court below, namely: the District Court of Iowa in and for Linn County.

Petitioner further shows that the said judgment of said Supreme Court was and is a final judgment in the highest court of the State of Iowa, in which a decision in said suit could or can be had. That in said final order and judgment and the proceedings had prior thereto in this case certain errors were committed to the prejudice of the Cedar Rapids Gas Light Company, all of which will
1102 more in detail appear from the assignment of errors which is filed with this petition.

Petitioner further shows that a Federal question was made in said case as hereinbefore set out, where was drawn in question the validity of a law of and authority exercised under the state of Iowa, on the ground of said law and authority being repugnant to the Constitution of the United States, and the decision was in favor of said law and authority, and that a decision of said Federal question was necessary to the judgment rendered.

Wherefore your petitioner prays that a Writ of Error to said Supreme Court be allowed; that citation be granted and signed; and that the bond herewith presented be approved; and upon compliance with the terms of the statutes in such cases made and provided said bond and Writ of Error may operate as a supersedeas; that the errors complained of may be reviewed in the Supreme Court of the United State and the judgment aforesaid of said Supreme Court of Iowa, be reversed.

CEDAR RAPIDS GAS LIGHT COMPANY,
By JOHN N. HUGHES,
JOHN M. GRIMM,
JAMES H. TREWIN,
Its Attorneys in Law and In Fact.
JOHN N. HUGHES,
JOHN M. GRIMM,
JAMES H. TREWIN,
Attorneys and of Council for Plaintiff in Error.

1103 In the Supreme Court of Iowa.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant, Plaintiff in Error,
vs.
CITY OF CEDAR RAPIDS, IOWA; GEORGE S. LIGHTNER, Mayor of said City; Charles H. Campbell (Impleaded as C. H. Campbell), William H. Stepanek (Impleaded as W. H. Stepanek), James H. Hughes (Impleaded as J. H. Hughes), Wallace G. Rowley (Impleaded as W. G. Rowley), Edward W. Winter (Impleaded as E. W. Winter), William W. Post (Impleaded as W. W. Post), William C. Byers (Impleaded as W. C. Byers), Frank W. Barta (Impleaded as F. W. Barta), Dominic Feiereisen (Impleaded as D. Feiereisen), and John K. Starman (Impleaded as J. K. Starman), Aldermen of said City, and Henry S. Keffer (Impleaded as H. S. Keffer), Recorder, Appellees, Defendants in Error.

The above entitled matter coming on to be heard upon the petition of the appellant therein for a writ of error from the Supreme Court of the United States to the Supreme Court of the State of Iowa, and upon examination of said petition and the record in said matter, and desiring to give the petitioner an opportunity to present in the Supreme Court of the United States the questions presented by the record in said matter.

It is ordered that a Writ of Error be, and is hereby, allowed to this court from the Supreme Court of the United States, and to operate as a supersedeas, and that the bond presented by said petitioner be, and the same is hereby, approved.

Dated November 18th, 1909.

W. D. EVANS.
Chief Justice of the Supreme Court of the State of Iowa.

1104 [Endorsed:] 18. 26405. No. —. In the Supreme Court of the State of Iowa. Cedar Rapids Gas Light Company, Appellant, Plaintiff in Error, vs. City of Cedar Rapids, Iowa, et al., Appellees, Defendants in Error. Petition for writ of error and order. Tax Copy Fee, $—. John N. Hughes, Grimm & Trewin, Attorneys for ——. Filed Nov. 18, 1909. H. L. Bousquet, Clerk Supreme Court.

1105 *Writ of Error.*

THE UNITED STATES OF AMERICA, *ss:*

The President of the United States of America to the Supreme Court of the State of Iowa, Greeting:

Because in the record and proceedings, as also in a plea, which is in the said Supreme Court of the State of Iowa, before you, or some of you being the highest court of law or equity of the said state in which a decision could be had in the said suit between the Cedar Rapids Gas Light Company and the City of Cedar Rapids, Iowa,

George S. Lightner, Mayor of said City, Charles H. Campbell (impleaded as C. H. Campbell), William H. Stepanek (impleaded as W. H. Stepanek), James H. Hughes (impleaded as J. H. Hughes), Wallace G. Rowley (impleaded as W. G. Rowley), Edward W. Winter (impleaded as E. W. Winter), William W. Post (impleaded as W. W. Post), William C. Byers (impleaded as W. C. Byers), Frank W. Barta (impleaded as F. W. Barta), Dominic Feiereisen (impleaded as D. Feiereisen) and John K. Starman (impleaded as J. K. Starman), Aldermen of said City, and Henry S. Keffer (impleaded as H. S. Keffer) Recorder, wherein was drawn in question the validity of a statute of, and authority exercised under said state, on the ground of their being repugnant to the Constitution and Laws of the United States, and the decision was in favor of the authority exercised thereunder, and against the right, specially set up and claimed under said clause of said Constitution, a manifest error hath happened, to the great damage of the said Cedar Rapids Gas Light Company as by its complaint appears and we being willing that error, if any hath been, shall be duly corrected, and full and speedy justice done to the parties aforesaid in this be-
1106 half, do command you, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same at Washington on the 18 day of December, 1909, in the said Supreme Court, to be then and there held, that the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein, to correct what of right and according to the laws and customs of the United States should be done.

Witness the Hon. Melville W. Fuller, Chief Justice of the said Supreme Court, the 18 day of November, in the year of our Lord nineteen hundred & nine.

[Seal U. S. Circuit Court, Southern District, Iowa.]

EDWARD R. MASON,
Clerk of the Circuit Court of the United States for the Southern District of Iowa.

Allowed by—

W. D. EVANS,
Chief Justice of the Supreme Court of Iowa.

1107 [Endorsed:] No. —. In the Supreme Court of the State of Iowa. Cedar Rapids Gas Light Co., Plaintiff in Error, vs. City of Cedar Rapids, Ia., et al., Defendants in Error. Writ of Error. Tax Copy Fee, $—. John N. Hughes, Grimm & Trewin, Attorneys for Plaintiff in Error. Filed Nov. 18, 1909. H. L. Bousquet, Clerk Supreme Court.

1108 In the Supreme Court of Iowa.

In Equity.

CEDAR RAPIDS GAS LIGHT COMPANY, Plaintiff in Error,

vs.

CITY OF CEDAR RAPIDS, IOWA; GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feicreisen, and J. K. Starman, Aldermen, and with the Mayor Constituting the Council of said City, and H. S. Keffer, Recorder, Defendants in Error.

Writ of Error from the Supreme Court of the United States to the Supreme Court of Iowa.

Assignment of Errors.

Appeal from Linn District Court.

Hon. F. O. Ellison, Judge.

Assignment of Errors on Writ of Error from Supreme Court of the United States to Supreme Court of Iowa.

Now comes the said plaintiff in error and respectfully submits that in the record, proceedings, decision and final judgment and decree of the Supreme Court of the State of Iowa, in the above entitled matter and cause there is manifest error in this to-wit:

1. The court erred in holding that the provision of plaintiff's franchise granted by Ordinance No. 427 of the City of Cedar Rapids, Iowa, as follows:

"That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20c. per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption,"

did not constitute a contract, between the plaintiff and the City of Cedar Rapids, and in holding that the obligation thereof was not impaired by Ordinance No. 752, because said Ordinance No. 752

fixed the price of gas, as follows:

1109 "SEC. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c.) per thousand feet therefor, and no person, firm or corporation, shall charge, exact or receive in excess of ninety cents (90c.) per thousand feet for gas supplied by them to any inhabitant of said city,"

and thus destroyed the provision of the franchise allowing the plaintiff in error to charge such a rate as would admit of allowing

to consumers a substantial discount on all bills for prompt payment. That said provision for discount for prompt payment of bills is a valuable contract right, the obligation of which is impaired by said Ordinance No. 752 and by the decision of the Supreme Court of Iowa holding the same to be valid, in violation of Section 10 of Article 1 of the Constitution of the United States.

2. The court erred in refusing to hold that, a contract existed between the City of Cedar Rapids and plaintiff permitting it to charge a sufficient rate to permit of a discount of 20c. per thousand feet for prompt payment, and that the ordinance fixing the price to be charged for gas at 90c. per thousand, without making provision for this discount was an impairment of the obligation of such contract and void as in violation of Section 10 of Article 1 of the Constitution of the United States.

3. The court erred in holding that because the plant was built up in part from and out of its previous earnings, that it was not entitled to earn and receive a fair return or any return upon the thus enhanced value of the plant at the time of fixing the 90c. rate, the said holding in effect being the taking of plaintiff's property for public use without compensation and without due process of law, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

1110 4. The court erred in finding the ordinance fixing the price of gas at 90c. per thousand feet reasonable, by refusing to include as a part of plaintiff's property used in the service of the public, the item of eight thousand dollars of working capital, which it found was necessarily invested in the service of the public, the said holding in effect being the taking of said property without due process of law and without compensation.

5. The court erred in finding the ordinance fixing the price of gas at 90c. per thousand feet reasonable by refusing to include as a part of plaintiff's property used in the service of the public one hundred thousand dollars on account of the item known as going value, which the said court expressly found was property, and part of the investment, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

6. The court erred in finding the ordinance in controversy valid, by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income, the item of valuation known as the Annex and being twenty thousand dollars' worth of real estate, and in holding that the same was unnecessary as an investment in the said business, the said holding in effect being the taking of said property without due process of law and without compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

7. The court erred in finding that the said ordinance was reasonable and valid, by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to

earn a reasonable income the item of valuation known as the
1111 old purifiers, the same being capital invested in the plant and withdrawn from the use of the stockholders, the said holding in effect being the taking of said property without due process of law and without compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

8. The court erred in finding the said ordinance in controversy to be reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income the item of valuation known as street mains, and in reducing the value of the street mains from that shown by the evidence, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor.

9. The court erred in finding the said ordinance valid by excluding the item of $5,000.00 known as the value of the high pressure main to the city limits and connected with the Marion system. The said exclusion of said valuation being a taking of said property without due process of law and without compensation therefor.

10. The court erred in finding the said ordinance in controversy reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public, and upon which it was entitled to earn a reasonable income the item of valuation known and designated upon the trial as "The Paving over mains," of $43,580.00. The said holding in effect being the taking of said item of property for public use without due process of law and without compensation therefor first being made.

11. The court erred in finding the said ordinance in controversy valid by excluding the items of property known and designated upon the trial as Engineering expenses, interest on capital during construction and promotion, all of which items were proper
1112 in determining the present value of the said plant and the amount of plaintiff's investment in the service of the public, the said ruling in effect being the taking of so much of plaintiff's property for public use without due process of law and without compensation.

12. The court erred in excluding large items of plaintiff's specific property from consideration in determining the value of the plant, among the same being the cost of paving over mains, cost of high pressure main to city limits, value of real estate known as "Annex," going value of the plant, engineering, expenses, interest on capital, and organization expenses, and thereby found that the ordinance is reasonable, whereas, if it had included said property, which it should have included, it must have found the said ordinance unreasonable, and by thus excluding the said property the said finding in effect is a taking of plaintiff's said property so excluded from said valuation without due process of law and without compensation.

13. The court erred in holding said Ordinance No. 752 to be valid by excluding from the expense of operation of plaintiff's said gas plant and from the cost of manufacture and distribution of gas, the item of depreciation as testified to by witnesses for plaintiff

in error, being more than 10c. per M c. f. per annum, and in substituting therefor a depreciation of 5c. per M c. f. per annum, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the 14th Amendment to the Constitution of the United States.

14. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following item: For the year 1905, $5,627.00
1113 for renewal of benches, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the 14th Amendment to the Constitution of the United States.

15. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture distribution of gas, the following items: The interest on loans, amounting to $142.29 for the year 1905, and $866.17 for the year 1906; which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the 14th Amendment to the Constitution of the United States.

16. The court erred in holding said Ordinance No. 725 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following items: Taxes on the "Annex," amounting to $175.60 for the year 1905, and $185.00 for the year 1906, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the 14th Amendment to the Constitution of the United States.

17. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following amounts charged off by the plaintiff in error on its books as depreciation:

1902	$ 7,291.53
1903	16,740.45
1904	8,833.52
1905	5,568.29
1906	7,669.18

the said several items being the difference between the de-
1114 preciation charged off by the plaintiff in error on its books for each of said years and 5c. per M. c. f. per annum of gas manufactured by the plaintiff in error, said 5c. per M. c. f. depreciation being as testified to by the witness Hall, which testimony

was received under objections, as set forth in assignments of error numbered 27, 28, 29 and 30.

18. The court erred in sustaining the said ordinance in controversy on the ground that plaintiff has an exclusive franchise and in holding that a lower rate would be and is reasonable because of the exclusive franchise, and the said ruling has the effect to deprive the plaintiff of its property without due process of law and without compensation.

19. The court erred in holding the said ordinance would afford plaintiff a reasonable income upon the property invested in the public service, by assuming that the said plant would earn large amounts under said ordinance in excess of what it was in fact earning as shown by the record and by including in its assumed earnings large items upon which and in support of which there was no evidence.

20. The court erred in holding that if the appellant would receive, under the 90c. ordinance any compensation for the use of its property the ordinance is valid.

21. The court erred in holding that it did not constitute a taking of appellant's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

22. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

23. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c. per thousand cubic feet deprives appellant of a fair and reasonable return upon
1115 its property used in the service of the public.

24. The court erred in not holding and finding that the ordinance is void, because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service.

25. The court erred in not holding and finding that the ordinance fixing the 90c. rate in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

26. The court erred in not finding from the whole of the evidence in the case that 90c. per M. c. f. for gas would not enable appellant to earn fair and reasonable compensation upon its property.

27. The record in the cause shows that James Hall, an expert accountant, having no knowledge of the gas business, testified as a witness for defendants in error, as to the value of the property of plaintiff in error and the cost of the manufacture and distribution of gas, and as to the proper amount of depreciation to be charged off annually as a part thereof, all over the objections of plaintiff in error that said witness was not qualified and not competent to give such testimony, and the court erred in the admission of such testimony and giving weight thereto, thereby holding said 90c. rate ordinance valid and depriving plaintiff in error of its property without due

process of law and without just compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

28. Mr. James Hall, a witness for defendants in error and an accountant, examined the books of account of the plaintiff in error and produced as the report of said examination Exhibit K-2, as
1116 identified in the record. This exhibit with the schedules attached purported to show the cost of manufacturing and distributing gas in Cedar Rapids, Iowa. It is based in part on data obtained from the books of plaintiff in error and in part on figures substituted by the witness which he says are in his opinion the proper figures. The depreciation charged off on the company's books was about 10c. per M. c. f. per annum of gas manufactured. This amount was testified to as fair by several practical gas men. Mr. Hall substituted in place of this amount 5c. per M. c. f. of gas manufactured per annum, and testified that in his opinion 5c. per M. c. f. was the proper amount of depreciation. Mr. Hall testified he had no practical knowledge of the gas business. The plaintiff preserved objections to Mr. Hall's testimony on the ground that he was not qualified and competent to give an opinion as to depreciation of a gas plant, and that his testimony, including said Exhibit K-2, was not competent; the same being mere opinions and conclusions of the witness as to matters of gas engineering and the practical operation of a gas plant, of which he had no knowledge.

The lower court erred in receiving and giving weight to such testimony, and holding on such testimony that the ordinance of the city of Cedar Rapids fixing the price of gas at 90c. per M c. f. was valid, and did not deprive plaintiff in error of its property without just compensation and without due process of law.

29. The court erred in admitting in evidence the statement of the witness Hall in said Exhibit K-2, as follows:

"Gas can be supplied to consumers of the city of Cedar Rapids at a price of 90c. per M c. f. and at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies."

over the objections of the plaintiff in error that the same was
1117 incompetent and that the witness was incompetent and not qualified, and in finding on such evidence that the ordinance of the said city of Cedar Rapids, fixing the price of gas at 90c. per M c. f. was valid, thus depriving plaintiff in error of its property without just compensation, in violation of the 14th amendment to the Constitution of the United States.

30. Mr. Edward W. Bemis, a witness for the defendants in error, testified, that he had no practical knowledge of the construction or operation of a gas plant, but that he had made a study of the cost of manufacturing and distribution of gas, having been employed as an expert witness in a number of cases. Mr. Bemis testified, as follows:

"I have noticed the tables on Exhibit "K-2" showing the average cost of gas for five years at Cedar Rapids to be 64.04 cents per M c. f.

Q. What have you to say as to whether those figures are reasonable or unreasonable?

Objected to by plaintiff as incompetent and calling for an improper method of getting at the price of gas, and because the witness is not a practical gas man or engineer, but his knowledge is wholly theoretical, and the witness is not competent to testify as to the cost of gas. By agreement, this objection is to apply to all questions asked this witness as to the cost of gas.

A. Taking the operating expense as given by Mr. Hall for five years at 64.04 cents, then to that I add an allowance for bad debts if there is no discount for prompt payment. I take that at .08c., because such were the losses from bad debts of the People's Gas Company in Cleveland in 1905. The allowance for insurance and claims I have given it .093c., that being the experience of all the Massachusetts companies for the last three years as computed from the returns of 60 companies. The allowance for bad debts and insurance would make 1.73c., which, added to Mr. Hall's 64.04c. would give a gross possible cost under the new ordinance of 65.77c. Then there are certain deductions that I have made, saving on office expenses of at least 2c., $2,000.00, saving on leakage of a possible 2c., saving on depreciation and repairs on manufacturing plant used for the making of gas for Marion ½c., or a total deduction of 4.5c.; this from the gross cost would leave the net cost 61.27c., and that on the sales of 91,331,000 c. f. would be a profit of $26,239.40, which would leave for possible dividends $22,489.40, after paying interest."

That the court erred in receiving the above evidence of the said witness over the objections of the plaintiff in error, and in
1118 giving weight to such evidence, and finding that gas could be manufactured and sold in Cedar Rapids at a cost of about 68.12c. per M c. f., thus, in effect, depriving the plaintiff in error of its property without due process of law and without just compensation, in violation of the 14th Amendment to the Constitution of the United States.

Dated November 18, 1909.

JOHN N. HUGHES,
JOHN M. GRIMM,
JAMES H. TREWIN,
Attorneys and Counsellors for Plaintiff in Error.

1119 [Endorsed:] No. — In the Supreme Court of the State of Iowa. Cedar Rapids Gas Light Co., Plaintiff in Error, Plaintiff, vs. City of Cedar Rapids, Ia., et al., Defendants in Error, Defendant-. Assignment of Errors. Filed Nov. 18, 1909. H. L. Bousquet, Clerk Supreme Court. Tax copy fee, $—. John N. Hughes, Grimm & Trewin, Attorneys for Plaintiff in Error.

1120 In the Supreme Court of Iowa.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant, Plaintiff in Error,
vs.
CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen of said City, and H. S. Keffer, Recorder, Appellees, Defendants in Error.

Bond on Writ of Error.

Know all men by these presents, That we, Cedar Rapids Gas Light Company as principal and Glenn M. Averill and John Thomas, as Sureties, are held and firmly bound unto the City of Cedar Rapids, Iowa, C. H. Campbell, W. H. Stepanek, J. H. Hughes, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, W. G. Rowley, J. K. Starman, Aldermen of said City, and H. S. Keffer, Recorder, in the sum of One Thousand ($1000.00) Dollars, to be paid to said obligees, their successors, representatives and assigns; to the payment of which well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally by these presents.

Sealed with out seals and dated this 17th day of November, A. D. 1909.

Whereas, the above named plaintiff in error hath prosecuted a Writ of Error in the Supreme Court of the United States to reverse the judgment rendered in the above entitled action by the Supreme Court of the State of Iowa.

Now therefore, the condition of this obligation is such that if the above entitled plaintiff in error shall prosecute
1121 his said Writ of Error to effect and answer all costs and damages, if he shall fail to make good his plea, then this obligation shall *re* void; otherwise to remain in full force and effect.

[Seal Cedar Rapids Gas Light Co., Cedar Rapids, Iowa.]

CEDAR RAPIDS GAS LIGHT CO.,
By GLENN M. AVERILL, *Secretary.*
GLENN M. AVERILL,
JOHN THOMAS, *Sureties.*

Signed, sealed and delivered in presence of
GEORGE B. DUTTON.
SAMUEL E. BENADORN.

I hereby approve the above and foregoing bond and the Sureties thereon this 18 day of November, 1909.

W. D. EVANS,
Chief Justice Supreme Court of the State of Iowa.

1122 [Endorsed:] No. —. In the Supreme Court of State Iowa. Cedar Rapids Gas Light Company, Appellant, Plaintiff in Error, Plaintiff, vs. City of Cedar Rapids et al., Appellees, Defendants in Error, Defendant. Bond on Writ of Error. Filed Nov. 18, 1909. H. L. Bousquet, Clerk Supreme Court. Tax Copy Fee, $—. John N. Hughes, Grimm & Trewin, Attorneys for Appellant, Plaintiff in Error.

1123 In the Supreme Court of Iowa.

CEDAR RAPIDS GAS LIGHT COMPANY, Appellant, Plaintiff in Error,
vs.
CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, Mayor of said City; C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, E. W. Winter, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, and J. K. Starman, Aldermen of said City, and H. S. Keffer, Recorder, Appellees, Defendants in Error.

Citation.

UNITED STATES OF AMERICA, *ss:*

To the City of Cedar Rapids, Iowa, George S. Lightner, Mayor of said Sity; Charles H. Campbell (impleaded as C. H. Campbell), William H. Stepanek (impleaded as W. H. Stepanek), James H. Hughes (impleaded as J. H. Hughes), Wallace G. Rowley (impleaded as W. G. Rowley), Edward W. Winter (impleaded as E. W. Winter), William W. Post (impleaded as W. W. Post), William C. Byers (impleaded as W. C. Byers), Frank W. Barta (impleaded as F. W. Barta), Dominic Feiereisen (impleaded as D. Feiereisen) and John K. Starman (impleaded as J. K. Starman), Aldermen of said City, and Henry S. Keffer (impleaded as H. S. Keffer), Recorder, Defendants in Erorr, Greeting:

You are hereby cited and admonished to be and appear at the Supreme Court of the United States, at Washington, D. C., within thirty (30) days from the date hereof, pursuant to a Writ of Error filed in the Clerk's office of the Supreme Court of the State of Iowa, wherein the Cedar Rapids Gas Light Company is Plaintiff in Error and you are Defendants in Error, to show, cause if any there be, why the judgment and decree rendered against the said Plaintiff in Error, as in the said Writ of Error mentioned, should
1124 not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Hon. W. D. Evans, Chief Justice of the Supreme Court of the State of Iowa, this 18th day of November in the year of our Lord one thousand nine hundred nine

W. D. EVANS,
Chief Justice of the Supreme Court of the State of Iowa.

Acceptance of Service.

Service of the foregoing citation is hereby accepted and copy thereof received, this 18 day of November, A. D. 1909, at Cedar Rapids, Iowa.

JOHN M. REDMOND,
JOHN D. STEWART,
F. C. BYERS,
J. W. JAMESON,
Attorneys for Defendants in Error.

1125 [Endorsed:] No.—. In the Supreme Court of the State of Iowa. Cedar Rapids Gas Light Company, appellant, Plaintiff in Error. Plaintiff, vs. City of Cedar Rapids, Iowa et al., Appellees, Defendants in Error, Defendant. Citation. Tax Copy Fee, $—. John N. Hughes, Grimm & Trewin, Attorneys for Appellant, Plaintiff in Error.

1126 STATE OF IOWA, *ss:*

I, H. L. Bousquet, Clerk of the Supreme Court of Iowa, do hereby certify that the foregoing is a true and correct transcript of the record, opinion and final judgment in the case of Cedar Rapids Gas Light Company, Plaintiff in Error vs. City of Cedar Rapids, et al., Defendants in Error, as full, true and complete as the same are of record and on file in my office.

I further certify that the Writ of Error, Citation and Supersedeas Bond, with the Order of Approval to operate as a Supersedeas endorsed thereon, are hereto attached in original form, and that true and correct copies thereof have been retain- in my office, and this return is made in obedience to said writ of error.

In testimony whereof witness my signature and the seal of said Court at Des Moines, Iowa, this 23rd day of November, 1909.

[Seal of the Supreme Court of Iowa.]

H. L. BOUSQUET,
Clerk Supreme Court of Iowa.

Endorsed on cover: File No. 21,910. Iowa Supreme Court. Term No. 163. Cedar Rapids Gas Light Company, plaintiff in error, vs. The City of Cedar Rapids, George S. Lightner, mayor, et al. Filed November 26th, 1909. File No. 21,910.

In the Supreme Court of the United States, October Term, 1911.

No. 163.

CEDAR RAPIDS GAS LIGHT COMPANY, Plaintiff in Error,
vs.
THE CITY OF CEDAR RAPIDS, GEORGE S. LIGHTNER, Mayor, et al., Defendants in Error.

In Error to the Supreme Court of the State of Iowa.

Stipulation as to the Completion of the Record.

It is hereby stipulated and agreed by and between the parties to the above entitled suit through and by their respective counsel, that the following is one of the rules of the Supreme Court of Iowa in force when said cause was tried therein (1907 Supplement to the Code of Iowa, p. 1182):

"Rule 54. The brief of appellant shall contain a short and clear statement, disclosing:

First. The nature of the action.

Second. What the issues were.

Third. How the issues were decided, and what the judgment or decree was.

Fourth. The errors relied upon for a reversal.

Fifth. A brief and concise statement of so much of the facts as fully presents the errors and exceptions relied upon referring to the pages and lines of the abstract. If the insufficiency of the evidence to sustain the verdict or finding, in fact or law, is assigned, the statement shall contain a condensed recital of the evidence in narrative form so as to present the substance clearly and concisely.

Following this statement, the brief shall contain, under a separate heading of each error relied on, separately numbered propositions or points, stated concisely, and without argument or elaboration, together with the authorities relied on in support of them; and in citing cases, the names of parties must be given, with the book and page where reported. When text books are cited the number or date of the edition must be stated with the number of the volume and page, or section. No alleged error or point, not contained in this statement of points, shall be raised afterwards, either by reply brief, or in oral or printed argument, or on petition for rehearing."

It is further stipulated that the plaintiff in error, the appellant in the Supreme Court of Iowa, by its counsel served on the defendants in error, the appellees in the Supreme Court of Iowa, through their counsel, and filed in the Supreme Court of Iowa, a brief and argument in which the following errors were set forth and relied upon for a reversal:

"Errors Relied upon for Reversal.

1. The court erred in holding that if the appellant would receive, under the 90c ordinance, any compensation for the use of its property the ordinance is valid.

2. The court erred in holding that it did not constitute a taking of appellant's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

3. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

4. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per thousand cubic feet deprives appellant of a fair and reasonable return upon its property used in the service of the public.

5. The court erred in not holding that the ordinance is void, because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service.

6. The court erred in not holding that the ordinance fixing the 90c rate — in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

7. The court erred in not holding that the ordinance is a violation of Section 18 of Article One of the Constitution of Iowa, because it is a taking of the private property of the appellant without just compensation.

8. The court erred in not holding that the ordinance fixing the rate of 90c is a violation of Section 21 of Article One of the Constitution of Iowa, and of Section 10 of Article One of the Constitution of the United States, because said ordinance impairs the obligations of contracts between the appellant and the City of Cedar Rapids.

9. The court erred in holding that the witnesses for appellee-Bemis and Hall, were qualified and competent as experts on the question of the cost of manufacture and distribution of gas.

10. The court erred in not finding from the whole of the evidence in the case that 90c per M. c. f. for gas would not enable appellant to earn fair and reasonable compensation upon its property.

11. The court erred in finding that the evidence fails to show that the rate of 90c per M. c. f. for gas fixed by ordinance No. 752 is unjust and unreasonable.

12. The court erred in finding from the whole of the evidence that the ordinance fixing the 90c rate for gas is not confiscatory in its effect.

13. The court erred in finding that the rate of 90c per M. c. f. for gas fixed by the ordinance is just and reasonable.

14. The court erred in holding that the rate ordinance in controversy enabled appellant to earn fair compensation upon its property.

15. The court erred in dismissing appellant's petition and entering decree and judgment against appellant and in favor of appellees.

16. The court erred in refusing to hold that the ordinance fixing the rate for gas at 90c per thousand feet was a violation of the Fourteenth Amendment to the Constitution of the United States, because it deprives appellant of its property without due process of law and without just compensation, and denies to appellant the equal protection of the law."

It is further stipulated and agreed that if it shall be held by the Supreme Court of the United States that the errors as above set forth and which appear in the appellant's brief, filed in the Supreme Court of Iowa, are a part of the record which should have been certified to the Supreme Court of the United States by the Clerk of the Supreme Court of the State of Iowa in obedience to the command of the writ of error granted in this case, then and in that case the certification as of the time the original record was certified by the Clerk of the Supreme Court of the State of Iowa as to the fact that the statement of errors above set forth did appear in the appellant's brief as above set forth is hereby waived, and the above record may be now certified by the Clerk of the Supreme Court of Iowa and be considered to the same extent and with the same force as though certified by the Clerk of the Supreme Court of Iowa at the time of certifying the original record.

It is further stipulated that the Clerk of the Supreme Court of the United States may print this stipulation on request of counsel for plaintiff in error, for submission to the Supreme Court of the United States.

Dated this 19th day of January, A. D. 1912.

JAMES H. TREWIN,
JOHN N. HUGHES,
Solicitors for Plaintiff in Error.
JAMES W. JAMISON,
WM. CHAMBERLAIN,
Solicitors for Defendants in Error.

STATE OF IOWA, *ss:*

I, B. W. Garrett, Clerk of the Supreme Court of the State of Iowa, do hereby certify that in the case of the Cedar Rapids Gas Light Company Appellant vs. the City of Cedar Rapids, George S. Lightner, Mayor, et al., appellees, which was tried in and decided by the Supreme Court of Iowa on the 4th day of May, 1909, the Cedar Rapids Gas Light Company, Appellant in said court, through its counsel, served on counsel for the Appellees in said court a Brief and Argument in said cause, and filed the same in the Supreme Court of Iowa, in which Brief and Argument on pages 6, 7 and 8 thereof, were set forth the errors relied upon by Appellant for reversal, and that the copy of said errors relied upon for reversal in the above and foregoing stipulation in a full, true and complete copy thereof, as the same remain on file in my office.

In testimony whereof, witness my hand and seal of office, this 22 day of January, 1912.

[Seal of the Supreme Court of Iowa.]

B. W. GARRETT,
Clerk of the Supreme Court of the State of Iowa.

[Endorsed:] 163/21910. No. 163. October Term, 1911. In the Supreme Court of the United States. Cedar Rapids Gas Light Company, Plaintiff in Error, vs. City of Cedar Rapids, George S. Lightner, Mayor, et al., Defendants in Error. Stipulation as to the completion of the record. Tax Copy Fees, $—. J. H. Trewin, Attorney for Plaintiff in Error.

[Endorsed:] File No. 21,910. Supreme Court U. S. October Term, 1911. Term No. 163. Grand Rapids Gas Light Company, Pl'ff in Error, vs. The City of Cedar Rapids et al. Stipulation as to addition to record. Filed January 27, 1912.

FILED
AUG 4 1909
JAMES H. MCKENNEY,
CLERK.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

No. 163

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et. al., 120 N. W. Rep. 366.

Motion to Advance, Because the Case Involves the Decision of a Question of Public Importance.

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. HAMMOND, City Solicitor.
For Defendants in Error.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et. al., 120 N. W. Rep. 966.

Motion to Advance, Because the Case Involves the Decision of a Question of Public Importance.

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor.
For Defendants in Error,

Comes now the defendants in error and move the court to advance this cause and take a submission of the Motion to Dismiss the Writ of Error or to affirm and in any event to advance this

cause, and in support of this motion to advance, defendants in error respectfully submit the following:

The questions that arise upon the writ of error to the supreme court of the State of Iowa are based upon an ordinance regulating and fixing the price at which gas shall be furnished to the City of Cedar Rapids and its inhabitants by the plaintiff in error, a public service corporation operating the only gas plant located in the City of Cedar Rapids.

The question for determination in this court arises as follows: On December 21, 1906, the municipal council of the City of Cedar Rapids, acting under an express legislative grant to regulate and fix the price of gas furinshed by a public service corporation operating under a municipal grant adopted and passed an ordinance reducing the rates then being collected by the Cedar Rapids Gas Light Company to 90 cents per 1,000 cubic feet.

Before the ordinance was published and put into effect, the Cedar Rapids Gas Light Co., a corporation organized under the laws of the State of Iowa, and operating a gas plant in the City of Cedar Rapids, Iowa, under a municipal grant, filed its petition in the district court of Linn County, Iowa, in equity, on the 24th day of December, 1906, and under the rules of practice and the laws of the State of Iowa governing the trial of equity causes challenging the rate thus fixed by the ordinance as being so low as to deprive the plaintiff in error of sufficient earnings at said rate with which to pay any dividends upon the value of its plant and its capital invested; and alleging that said ordinance if put in force would reduce the earning capacity of the plaintiff's gas works more than 25 per cent and that the ordinance thus reducing the rate was oppressive, unreasonable and unjust and that said ordinance if put in force, at said rate, would operate as a confiscation of the plaintiff's property in violation of Section One of the 14th Amendment to the Constitution of the United States and that if enforced it would deprive the plaintiff of the equal protection of the law and of its property without due process of law and without compensation therefor by depriving plaintiff of earnings sufficient to pay dividends or compensation upon its investment to its stockholders

and the said ordinance passed December 21, 1906, if enforced is in violation of Section 10, Article One of the Constitution of the United States, in that it impaired the obligations of existing contracts between plaintiff and defendant, the City of Cedar Rapids, and is in violation of Sections 18 and 21 of Article One of the Constitution of the State of Iowa prohibiting the taking of private property for public use without compensation therefor first being made by due process of law and prohibiting any law or ordinance of any city impairing the obligation of contracts.

It further alleged in its petition that the enforcement of the ordinance attempting to put the said ordinance in force would produce great and irreparable injury to the plaintiff and will involve it in a multiplicity of suits and greatly harass and injure it in the transaction of its business and affairs and it is without adequate remedy at law and can only obtain full and adequate remedy by and through this equitable suit and proceedings.

Wherefore it prayed that a temporary writ of injunction be granted directed to the defendant City of Cedar Rapids and its municipal council and their agents restraining them from causing or authorizing or permitting the enforcement of the ordinance and from passing or publishing any other such ordinance purporting to regulate the rates and upon final hearing asking that said injunction be made perpetual and said ordinance declared null and void. A temporary writ of injunction was granted as prayed.

Thereafter and under the rules of practice in equity causes in the State of Iowa, the defendant City of Cedar Rapids and its municipal council filed its answer admitting the passing of the ordinance and denying the value of the property and the plaintiff's investment as alleged by it and denying that there ever existed or then existed any contract whatsoever between the plaintiff in error and the defendant City as to any rate having been theretofore agreed upon.

Attached to the plaintiff's petition was a copy of the ordinance granting the right of the plaintiff to occupy the streets, alleys and public places with its pipes and mains and other appliances for conducting gas through the City of Cedar Rapids for distribution and

the ordinance renewing the first grant, which ordinances contain the only pretext of any contract as to rates and it appears from said ordinances and renewal thereof that no rate at which gas should be furnished was agreed upon or fixed except in the first franchise that it should not exceed $5.00 per 1000 thousand cubic feet, and in the renewal ordinance that the rate should not exceed $1.80 per 1000 cubic feet.

On November 14, 1907, the cause came on for trial before the court, the Hon. F. O. Ellison sole judge presiding, upon the issues thus joined and a large volume of evidence was taken in behalf of the plaintiff and the defendants, mostly confined to the capital invested by the plaintiff in error and the value of its plant and the cost of manufacturing and distributing gas in the City of Cedar Rapids and the operating expenses of the plaintiff's gas works, and after a full hearing on the merits, and on the 30th day of January, 1908, the court made its finding, in substance that after carefully weighing and considering all of the facts in evidence and the arguments of counsel, it determined that the evidence failed to show that the rates fixed are unjust and unreasonable or that the enforcement of said ordinance would be equivalent to the taking of plaintiff's property without just compensation or that it would deprive the plaintiff of its property without due process of law or that it is confiscatory in its effects and that the rates fixed by said ordinance are just and reasonable and that said ordinance is valid and should be sustained; that the temporary injunction granted should be dissolved and the plaintiff's petition dismissed.

From this judgment and decree of the district court of Linn County, Iowa, the Hon. F. O. Ellison, Judge presiding, the plaintiff in error perfected an appeal to the supreme court of the State of Iowa on or about February 1, 1908.

That in the due course of the business of the Supreme Court of the State of Iowa said cause was presented to said court on the record and evidence and proceedings had and done in the district court of Linn County, Iowa, and fully argued and submitted to said Supreme Court of Iowa and considered by said supreme court, de novo, and on the 4th day of May, 1909, the supreme court of Iowa

made its finding, judgment and decree as follows: "Should the ordinance, after being put in operation, and given a fair test, be found to deprive the plaintiff of a fair return on its investment it ought not to be deprived of the opportunity of again presenting the matter in court. For this reason the petition will be dismissed without prejudice to such action. As so modified the judgment is affirmed." See official opinion, 120 N. W. R., 966.

A petition for rehearing was filed by the plaintiff in error in pursuance of the rules of practice of the supreme court of the State of Iowa, and afterwards on the 15th day of November, 1909, the supreme court of the State of Iowa, overruled and denied the petition for rehearing. Afterwards on the 18th day of November, 1909, the Hon. W. D. Evans, Chief Justice of the Supreme Court of the State of Iowa, granted a writ of error to the Supreme Court of the United States and afterwards and within 30 days from the granting of said writ of error the Clerk of the Supreme court of the State of Iowa certified all of the record and proceedings had and done in the supreme court of the State of Iowa including a certified copy of the opinion of the Supreme Court of the State of Iowa, to the Supreme Court of the United States and on the 6th day of December, 1909, the plaintiff in error caused to be filed with the Clerk of the Supreme court of the United States the record of the proceedings had and done in the supreme court of the State of Iowa and caused said case to be placed upon the docket by the Clerk of the Supreme Court of the United States, and said cause was docketed and said proceedings are now of record in the Supreme Court of the United States for disposition in the due course of the business of the supreme court of the United States.

That afterwards and on the 14th day of February, 1910, there was served upon James W. Jamison and John M. Redmond, City Solicitor of the City of Cedar Rapids, a type written statement of many pages of what was claimed to be the record as made and certified by the Clerk of the Supreme Court of the State of Iowa, to which statement the counsel for the defendants in error objected as not complying with the rules of this court indicating what portion of the record the plaintiff in error desired to have printed within

90 days as provided by the rules, and afterwards on or about May 5, 1910, the defendants in error caused to be made and served upon the plaintiff in error, a demand for the printing of the whole of the record by the Clerk of the Supreme Court of the United States as required by the rules of the Supreme Court of the United States and as defendants in error are advised the plaintiff in error has not at this time nor at any time made any deposit of the cost of printing the record as provided by the rules of the Supreme Court of the United States.

I.

That in view of the provisions of Section 709 of the compiled statutes of the United States and of Section 1011 of the Compiled Statutes of the United States, that questions of fact will not be reviewed by this court and in view of the fact of the settled rule of practice in the Supreme Court of the United States, that in equity causes upon a writ of error to the supreme court of a state, the facs as found and determined by the supreme court of the state are final and conclusive upon this court, no part of the record of the supreme court of the State of Iowa other than the printed motion to dismiss the writ of error is material or necessary to a determination of the jurisdictional question presented. Both parties to the litigation, to-wit, the Cedar Rapids Gas Light Company, plaintiff in error, and the City of Cedar Rapids et al., defendants in error, unite in a request to have this cause advanced.

II.

After the issuing of the temporary writ of injunction by the district court of Linn County, Iowa, certain motions were made to dissolve the injunction and to modify the same. Upon the hearing of the motion to dissolve and to modify, the district court of Linn county, Iowa, made and entered an order modifying the temporary writ of injunction so as to permit the City of Cedar Rapids and its municipal council to publish the ordinance in accordance with the laws of the State of Iowa, and also made and entered of record an

order requiring the Cedar Rapids Gas Light Company to issue a receipt to each gas consumer who paid his gas bill on or before the 10th day of each month, a statement showing the difference in the amount collected between the ordinance rate of 90 cents per 1,000 cubic feet and the amount collected, and to add to such statement a promise to repay to the consumer such difference, together with 6 per cent interest in case the ordinance was held valid.

When the case was appealed to the supreme court of the State of Iowa, an application was made to a justice of the Supreme Court, to-wit, the Hon. Scott M. Ladd, for a restraining order to preserve the status quo of the gas company and its rights pending the appeal in the supreme court, and said justice of the supreme court made and entered an order restraining further proceedings on the part of the City of Cedar Rapids to enforce the ordinance until further orders, but conditioned said order that the Cedar Rapids Gas Light Company deposit with a trustee the amount collected in excess of the ordinance rate of 90 cents, thus impounding the excess in the hands of a trustee. The Hon. W. D. Evans, Chief Justice of the Supreme Court of the State of Iowa, in granting the writ of error in this court, also made and entered an order continuing in force, pending the appeal in the supreme court of the United States, the order theretofore granted.

Since the commencement of this litigation the City of Cedar Rapids has steadily grown and increased in population and the consumption of gas by the inhabitants of the City of Cedar Rapids has increased, but the gas company has made no extensions of its system other than to make such connections as were absolutely necessary, and has made no repairs except such as were absolutely necessary to preserve its property; that the extensions of its system in order to adequately serve the inhabitants of the City of Cedar Rapids with gas for domestic and other uses are essential and necessary to be made, and the City of Cedar Rapids and its municipal council are demanding that extensions and improvements of the gas works of the plaintiff be made to keep pace with the growth of the City and increased consumption of gas, but has taken no active measures to require such extensions and improvements of the plaintiff's gas works.

That by reason of the litigation and the conditions existing, great loss and irreparable injury is being suffered by the inhabitants of the City of Cedar Rapids and also by the plaintiff in error.

Therefore it is to the great interest of the public that the questions involved in this litigation be speedily determined and to the end that it may be speedily determined the defendants in error submit that this motion to advance this cause ought to be sustained.

JAMES W. JAMISON,
JOHN M. REDMOND, *City Solicitor,*
For Defendants in Error.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS ET AL.,
Defendants in Error.

No. 168

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et al., 120 N. W. Rep. 968.

Resistance to Motion to Advance

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error.

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et al., 120 N. W. Rep. 966.

Resistance to Motion to Advance

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.

Comes now the plaintiff in error, and resists the Motion to Advance the said cause upon the following grounds:

I.

It is claimed on page 6 of said Motion, that the plaintiff in error has not made provision for the cost of the printing of the

record, as provided by the rules of this court. The following correspondence between counsel for the plaintiff in error and the clerk of this court effectually disposes of this question:

"May 2, 1910.

Hon. James H. McKenney,
Clerk of Supreme Court of the United States,
Washington, D. C.

Dear Sir:

In the case of the Cedar Rapids Gas Light Company, Plaintiff, vs. the City of Cedar Rapids et al, Defendants, No. 684 October Term, 1909, we have not been able to come to an agreement with the attorneys for the defendants in reference to the portion of the record to be printed, and they have served notice on us that they desire to have the entire record printed in accordance with the rules of court. We, therefore, write to have you furnish us estimate of the costs, and we will either file bond or send you draft to cover the same, as you may request; and we are prepared to do all other things necessary to secure the proper printing of and service of the record.

Kindly let us hear from you.

Very truly yours,

GRIMM & TREWIN."

Per J. H. Trewin.
JHT*CJ.

"Office of the Clerk.

SUPREME COURT OF THE UNITED STATES,

Washington, D. C.

May 5, 1910.

Grimm & Trewin, Esqs.,
Cedar Rapids, Ia.

Gentlemen:

Yours of 2nd inst., received.

Case of Cedar Rapids Gas Light Co., v. City of Cedar Rapids et al., No. 684, Oct. Term, 1909, will not be reached for hearing in regular call of the docket before the latter part of the Oct. Term, 1910, and may not be so reached before the early part of the Oct. Term, 1911. The record in the case will not be reached in order for printing until some time next fall or winter, and it need not be printed until it is so reached. When so reached, you will be

notified what additional deposit is required, or, if you desire to print it out of its order, I will furnish you an estimate on request.

Yours truly,

Jas. H. McKenney,
Clerk, Supreme Court, U. S.
Per N. C. M."

Plaintiff in error holds itself ready and willing to advance the money, and to do all other things necessary to print the said record.

II.

The plaintiff in error, however, is willing to have this cause advanced, provided that a sufficient length of time is given before the submission of said cause to properly print the record, and to prepare and print the arguments, and suggests that March or April, 1911, is as early a date, as in justice to the parties, as this cause can be set down for hearing on the merits.

III

On page 7 the defendants in error raise the point that the city has steadily grown in population, and consumption of gas since the trial of this case. This statement is admitted to be true, but the statement following it to the effect that the gas company has made no extensions of its system except where absolutely necessary is denied, and the plaintiff in error alleges the fact to be that it has extended its plant, mains, and system so as to meet all requirements of the city and its inhabitants, and has been meeting the demands upon it at all times, and extending and increasing its business as rapidly as possible. However, the gas company deems it to be to its interests as well as to the interests of the public to have the question involved in this suit determined as speedily as possible, and therefore, consents to the advancement of said cause, as hereinbefore set forth.

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
Attorneys for Plaintiff in Error.

IN THE

Supreme Court of the United [illegible]

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

No.

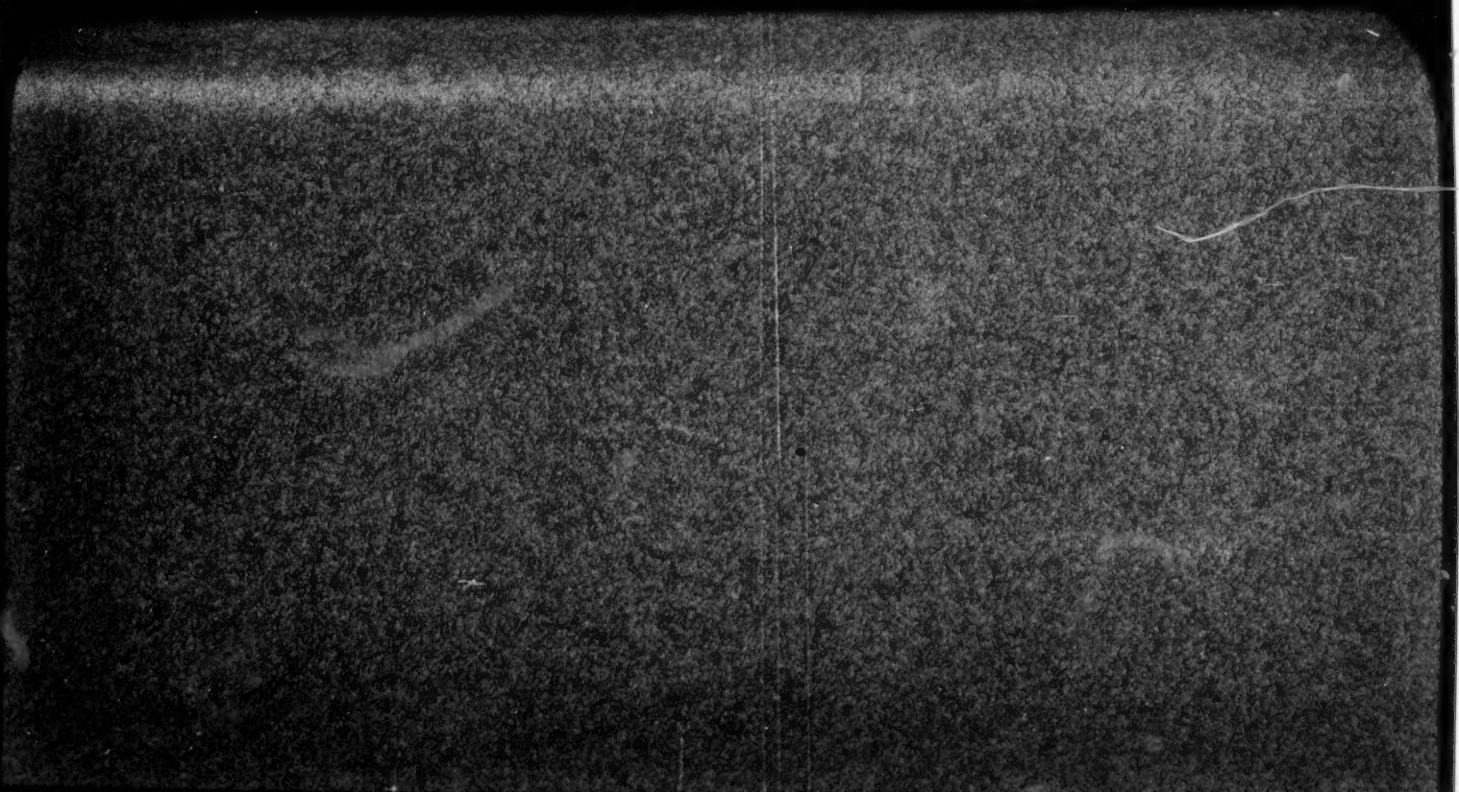
IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

The Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et al., 120 N. W. Rep. 360.

Brief and Reply to Resistance to Motion to Dismiss or Affirm.

JOHN N. ROTHROCK,
JAMES H. TRIMBLE,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
For Defendants in Error.



IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET. AL.,
Defendants in Error.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et. al., 120 N. W. Rep. 966.

Brief and Reply to Resistance to Motion to Dismiss or Affirm.

JOHN N. HUGHES,
JAMES H. TTEWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
For Defendants in Error

The plaintiff in error joins in the motion to advance the cause.

The points made in resistance to the motion to dismiss are:

(1) That this court should examine into the facts in order to determine whether a federal question is involved.

(2) That a contract was pleaded between the defendant city and the plaintiff in this, that the ordinance granting to the plaintiff

its franchise constituted a contract between plaintiff and the defendant.

(3) That the ordinance passed December 21, 1906, is in violation of and impairs a contract between plaintiff and defendant in respect to depriving plaintiff of a rate for gas which will not admit of allowing to consumers a substantial discount for prompt payment and thus it violates Sections 18 and 21 of Article 1 of the Constitution of the State of Iowa, and Section 10 of Article 1 of the Constitution of the United States.

I. II.

WILL THIS COURT EXAMINE INTO THE FACTS IN ORDER TO DETERMINE WHETHER A FEDERAL QUESTION IS INVOLVED ON A WRIT OF ERROR TO THE STATE COURT?

Plaintiff contends under the Second Division of its resistance that there is no distinction between a case brought to this court upon an appeal from a circuit court of the United States and a case brought to this court on a writ of error to a state supreme court, and this because of a provision of Section 709 of the Revised Statutes of the United States as follows: "The writ shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States. Section 692 of the Revised Statutes of the United States provides that an appeal shall be allowed to the supreme court in all final decrees of any circuit court or any district court acting as a circuit court in cases of equity. * * *"

Wiscart vs. D'Auchy, 3 Dall. 321.
U. S. vs. Goodwin, 7 Cranch. 108.
Hemmingway vs. Fisher, 20 How. 255.

It is held by this court that the legislation of congress from the foundation of the government is that a writ of error brings up matters of law only. And that a writ of error has always been dis-

tinguished from an appeal. That an appeal, unless expressly restricted, brings up both law and fact.

Cohens vs. Virginia, 6 Shea. 264.

Verden vs. Coleman, 22 How. U. S., 192.

The only appellate jurisdiction which has ever been conferred by congress upon the supreme court to review the judgment or decrees at law or in equity of the highest court of a state has been by writ of error only.

Dower vs. Richards, 151 U. S. 658.

It is to be considered that when the jurisdictional statutes of the United States speak of an appeal and of a writ of error the terms are not used promiscuously. They are to be understood according to their ordinary acceptation unless something appears in the act itself to control, modify or change the fixed technical sense which they have previously borne. Thus an appeal brings up both the law and fact. But a writ of error removes nothing for re-examination but the law.

Trials by jury in a circuit court of the United States in actions at law have ever remained reviewable only by writ of error.

The jurisdiction of this court to review the judgment or decrees of a state court on writ of error is limited to the specific instances of denials of federal rights pertaining to the constitutionality of federal or state statutes or to certain rights, immunities and privileges of federal origin specially set up in the state court and denied by the rulings and judgments of that court. The cases in this court sustaining this proposition are so numerous that it would be an idle parade to cite them.

This brings us to the point made that the ordinance granting the plaintiff its franchise and fixing the maximum rate at which gas should be furnished to private consumers constitutes a contract between plaintiff and the defendant which has been impaired or set aside by the ordinance of December 21, 1906, fixing a lower rate.

We think that the case of Knoxville Water Co. vs. Knoxville, 189 U. S. 434, is decisive of this contention. In the Knoxville case it appears that a contract was entered into between the water com-

pany and the city of Knoxville whereby, in consideration of the water company constructing and operating a system of water works and furnishing water to private consumers it built its system of water works and for a number of years furnished water to private consumers thereunder and that later the city passed an ordinance fixing the rates at which the water company should be required to furnish water to private consumers at a much lower rate than that named in the contract. And it was contended by the water company that the ordinance lowering the rate impaired and repudiated the contract. The contract contained three distinct parts: (1) The promises of the company; (2) those of the city; (3) the mutual undertaking. In the first part the company undertook as follows: "Said company shall supply private consumers with water at a rate not to exceed 5 cents per 100 gallons." It was contended that this amounted to a contract between the water company and the city which deprived the city of the right to pass an ordinance changing the rates thus fixed.

In discussing the question of the binding force of this language to constitute a contract this court said:

"The trouble at the bottom of the company's case is that the supposed contract upon which it is founded does not exist. If such a contract had been intended, it was far too important to be left to implication. In form the words are the words of the company alone. They occur in the part of the contract which sets forth the company's undertakings, not in the part devoted to the promises of the city or in that which contains the still later mutual agreements. They are the words of a company which was notified by the act which called it into being of the power expressly conferred upon the city 'by ordinance to regulate the price of water,' which the company might supply. People who have accepted, as experience shows that people will accept, a charter subject to such liabilities, cannot complain of them or repudiate them, nor can the company which they formed. This consideration answers a portion of the company's argument as to its rights under the 14th amendment and makes it unnecessary to consider whether the regulation of water rates is properly to be classed as a police power." And further dis-

cussing this subject this court said: "Some argument was attempted as to the ordinance impairing the obligation of the contracts between the plaintiff company and its consumers. But such contracts, of course, were made by it subject to whatever power the city possessed to modify rates. The company could not take away that power by making such contracts."

The plaintiff gas company erected its gas plant under a franchise which expired and which was renewed in 1896, as appears by the ordinance attached to plaintiff's petition. An examination of the ordinance attached to the plaintiff's petition shows that it is claimed that it had a contract with the city of Cedar Rapids by which the city was bound to allow the gas company such rates as would permit it to give substantial discount for prompt payment does not in fact exist and the trouble with the plaintiff's case is that it has no such contract. When its franchise was renewed it knew and was bound to know of the provisions of the statutes of Iowa respecting the right of the city of Cedar Rapids to lower the rate if it should so desire.

It is provided by Section 1691 of the Code of Iowa as follows: "Legislative Control. The Articles of Incorporation, by-laws, rules and regulations of corporations hereafter organized under the provisions of this title, or whose organization may be adopted or amended hereunder, shall at all times be subject to legislative control, and may be at any time altered, abridged or set aside by law, and every franchise obtained, used or enjoyed by such corporation may be regulated, withheld, or be subject to conditions imposed upon the enjoyment thereof, whenever the general assembly shall deem necessary for the public good."

And by Section 725 of the Code of Iowa, the legislature of the state granted to municipalities the power to regulate and fix the rent or rate for water, gas, light, or power, and further provided as follows: "And these powers shall not be abridged by ordinance, resolution or contract."

Now under the provisions of the Statutes of Iowa above cited, it is apparent that the plaintiff gas company took its franchise subject to the power of the city as conferred upon it by the legislature

of Iowa to fix the rates for gas by ordinance and with notice that the right to do so could not be contracted away by the city of Cedar Rapids for any purpose. Therefore, we insist that the point made in the resistance to the motion to dismiss that the ordinance impairs the obligation of any contract between the plaintiff and the defendant is without foundation and rests upon nothing but a mere assertion. It does not have colorable foundation to rest upon.

The plaintiff gas company being created a corporation by the provisions of the statutes of the state of Iowa could have no other or greater right or privilege or immunity under the constitution of the United States or the state of Iowa than any other citizen of Iowa.

III.

Replying to the third point of the resistance to the motion to dismiss, we cite Section 1691 of the Code of Iowa and Section 725 of the Code of Iowa, hereinbefore set out. From these sections it is apparent that when the plaintiff accepted of its franchise, whether it constituted a contract or it, it accepted it subject to the legislative control of the State of Iowa and subject to be at any time altered, abridged or set aside. It also accepted it subject to the provisions of Section 725, which section delegated to the defendant full power and authority to regulate and fix the rate for gas to be furnished to private consumers, and we submit that the opinion of this court in Knoxville Water Co. vs. Knoxville et al., 189 U.S.434, is conclusive against the plaintiff's contention that the passing of the ordinance December 21, 1906, lowering the rate, was a violation of any contract right claimed by the plaintiff under the provisions of the ordinances granting it its franchise.

REVIEW OF SOME OF THE AUTHORITIES CITED BY THE PLAINTIFF IN RESISTANCE TO THE MOTION TO DISMISS.

The case of Knoxville vs. Knoxville Water Co., 212 U. S. 1, reached this court upon an appeal from the circuit court of the United States for the Eastern District of Tennessee and under the provisions of the Statutes of the United States and the rules of this

court brought up questions of both law and fact. The case is not an authority that this court on a writ of error to the Supreme Court of Iowa will look into the record and inquire into the facts, especially in the absence of a pleading presenting a federal question under the constitution of the United States or laws of the United States.

The case of Dower vs. Richards, 151 U. S. 658, was a writ of error to the Supreme Court of the State of California, but the case did not involve any motion to dismiss the writ of error and the question of whether the case could or not have been dismissed on motion was not involved. The case, however, as to the power and authority of this court as a court of review on a writ of error to a state supreme court is discussed and is in point with the contention of the defendant in error as to when and how a federal question should be pleaded in order to confer jurisdiction upon this court.

The cases of:

Powell vs. Brunswick County, 150 U. S. 440.
Sayward vs. Denny, 158 U. S. 180.
C. B. & Q. Ry. Co. vs. City of Chicago, 166 U. S. 226.
Greenbay Canal Co. vs. Paten Paper Co., 172 U. S. 58.
Dewey vs. Des Moines, 173 U. S. 199.
Citizens' Savings Bank vs. Owensboro, 173 U. S. 644.
Vicksburg Water Works Co. vs. Vicksburg, 185 U. S. 65; 46 L. Ed. 808.

All sustain the rule contended for by defendant in error and are not authority for the contention of the plaintiff in error.

The reason of this contention is found in the opinion of the Supreme Court of the State of Iowa. An examination of this opinion shows that a federal question was not involved and not decided and that in the affirming of the judgment, the basis of the opinion is not grounded on any federal question necessary to be decided, but upon a question of fact, and this question of fact was, whether the rate fixed by the ordinance in December, 1906, at which plaintiff should furnish gas to private consumers, was so low as to amount to the taking of the property of the plaintiff without compensation.

The case of Hastings vs. Ames, 68 Fed. 726, was an appeal

from a circuit court of the United States to the circuit court of appeals. Therefore, the case as to the power of this court to inquire into the facts on a motion to dismiss where no federal question is stated in the pleadings, is not in point. The same was considered on appeal and not on writ of error. It was not an appeal from the circuit court of the United States in an action at law.

It is said, however, by plaintiff in error that the petition set out the original franchise; the amendment thereto; description of the plaintiff's property; detailed statement of its value and its earning; the 90-cent ordinance; and specifically pleaded Section 1 of the Constitution of the United States as being violated by the ordinance in question. Now whether the original franchise and the amendment thereto as set out in the plaintiff's petition constituted a contract between the city of Cedar Rapids and the plaintiff must be determined from the language of the franchise and amendment thereto. And we submit it does not constitute a contract.

If it should be held to constitute a contract between the city and plaintiff it was subject to be modified or changed at any time as the public interests might require as provided by Sections 1691 and 725 of the Code of Iowa, as the power to fix rates under the Code of Iowa, as provided by Section 725 could not be contracted away by the city.

We insist, however, that the ordinance granting to the plaintiff a franchise and the extension thereof in no sense constituted a contract between the plaintiff and defendant as to the rates to be charged for gas, and that the case of Knoxville Water Co. vs. Knoxville, 189 U. S. 434, is decisive against the contention of the plaintiff.

The case of Knoxville vs. Knoxville Water Co., 212 U. S. 1, was an appeal from the circuit court of the United States and did not reach this court on writ of error. Therefore, what is said in respect to the findings of fact by the master in chancery has no application to the instant case.

The case of Gross vs. U. S. Mortgage Co., 108 U. S. 447, cited by the plaintiff, is not an authority for the ruling contended for by the plaintiff for this court to inquire into and examine the facts, but

is an authority against the contention of plaintiff in this: The opinion of the Supreme Court of Iowa, which we contend is a part of the record and which this court should examine to ascertain whether the opinion is grounded upon any federal question which was necessary to be determined by the Supreme Court of Iowa, and which was determined by it in making its decision adversely to the plaintiff in error, is the precise point involved in Gross vs. U. S. Mortgage Co.

In the case of Buena Vista County vs. Iowa Falls Ry. Co., 112 U. S. 165, and the case of Adams County vs. Burlington & Mo. Ry. Co., 112 U. S. 123, it appears from the opinion of the Supreme Court of the State of Iowa that the constitutional question involved was specially pleaded and that it was necessary in making the decision by the Supreme Court of Iowa to determine the question, and it appears in the opinion that the question was determined.

The cases cited by the plaintiff in error to the effect that the granting of a franchise by a municipal corporation to a public service corporation constitute a contract and the case of Walla Walla vs. Walla Walla Water Co., 172 U. S., and the other cases,—

New Orleans Water Works Co. vs. Rivers.

Tammany Water Works vs. New Orleans Water Works, 120 U. S. 64.

Involve only the question that where the statute authorizes a municipal corporation to grant a franchise, that such granting of a franchise constitutes a contract in the sense that the franchise thus granted and accepted cannot be repudiated or withdrawn. None of the case cited go to the extent of holding that where a franchise has been granted and accepted in pursuance of a statute like the one in the State of Iowa and like the one in Tennessee and involved in the Knoxville case, constitutes a contract in respect to altering or changing the rates from time to time as public necessity might require.

We submit that the motion to dismiss the writ of error is well taken and should be sustained.

Respectfully submitted,

J. W. JAMISON,
For Defendants in Error.

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IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY, PLAINTIFF IN ERROR

vs.

THE CITY OF CEDAR RAPIDS, ET AL., DEFENDANTS IN ERROR

OCTOBER TERM, 1911

No. 163

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA

Case reported below as Cedar Rapids Gas Light Co. *vs.* The City of Cedar Rapids, et al., 120 N. W. Rep. 966; 144 Iowa 426.

BRIEF FOR PLAINTIFF IN ERROR ON THE FACTS AND LAW

JAMES H. TREWIN,
JOHN N. HUGHES,
Solicitors *For Plaintiff in Error.*

JAMES W. JAMISON,
WM. CHAMBERLAIN, City Attorney,
Solicitors *For Defendants in Error.*

I

NATURE AND RESULT OF THE SUIT

This is a suit in equity brought in the District Court of Linn County, Iowa, by the Cedar Rapids Gas Light Company, a public service corporation manufacturing, distributing and selling gas in the city of Cedar Rapids, Iowa, under a franchise granted by the City Council thereof May 26, 1896, against the city of Cedar Rapids and the officers thereof to enjoin the enforcement of the following ordinance adopted by the City Council of said city on December 21st, 1906, and effective January 1st, 1907:

"ORDINANCE NO. 752.

"An Ordinance Regulating The Rates to Be Charged For Gas and Providing The Penalty For The Violation Thereof.

"Be it Ordained By The City Council, Of The City of Cedar Rapids, Iowa:

"Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city.

"Sec. 2. Any person, firm or corporation, violating any of the provisions of this ordinance shall, upon conviction thereof, be punished by fine of not less than Ten Dollars ($10.00) or more than One Hundred Dollars (100.00)." (R. 9).

Trial was had in the District Court, and the court entered a decree dismissing the plaintiff's petition.

An appeal was taken to the Supreme Court of Iowa, and trial had *de novo* in that court, and the decree of the District Court was affirmed. Thereupon the suit was brought into this court by writ of error to the Supreme Court of Iowa.

II

THE ISSUES

a. *The Petition.*

The plaintiff in error alleges that it is a public service corporation furnishing gas for domestic and other purposes to the residents of Cedar Rapids, Iowa; that the defendant in error is a municipal cor-

poration organized and operating under a special charter, setting forth also the names of the mayor, and members of the Board of Aldermen as constituting the City Council of said city.

That on the 17th day of November, 1871, the City Council adopted and put in force Ordinance No. 112, being the contract and franchise under which the plaintiff in error was authorized to establish and operate a plant for the manufacture and sale of gas in said city. (Ex. "A" to the Petition, Record 7).

That on the 26th day of May, 1896, the city, by its council and mayor, adopted a certain other ordinance and franchise, No. 437, being an amendment to said Exhibit "A" attached to the petition as Exhibit "B," (Record 8.) Said Ordinance No. 437 (Exhibit "B"), grants to the plaintiff in error the right and privilege to maintain and operate a plant for the manufacture, distribution, and sale of gas for the period of nineteen years, eleven months, and twenty-five days from and after May 26th, 1896.

Section 3 thereof (Record 8, Or. 14) grants to the plaintiff in error the privilege to charge $1.80 per thousand cubic feet and twenty cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and provides that the city shall be furnished gas at ten cents per thousand cubic feet less than the price paid by individual consumers.

Section 3 provides that the privileges granted in the ordinance are upon the condition that the gas company: "shall at all times, unavoidable accidents only excepted, hold itself in readiness to furnish and shall furnish all gas required by the said city and the inhabitants thereof, and shall permanently maintain good, complete, and substantial gas works equal to the best in any city of the same or less population in the State of Iowa, and shall furnish to the city and inhabitants thereof as good a quality of gas as that furnished by any other gas company in the State of Iowa." This ordinance was accepted by the gas company (Record 581).

It is further alleged in the petition (Record 2, Or. 4) that the city did contract and agree with the gas company, that it should have the right and authority to charge and collect certain rates, bills, and charges, named in and designated by the terms and provisions in said ordinance and franchise, and that the gas company never waived, modified or surrendered its rights under said franchise except that in the said ordinance No. 437, (Exhibit "B") the rates to be charged were reduced to $1.80 per thousand cubic feet, and twenty cents per thousand cubic feet discount for payment on or before the 10th of each month after consumption.

That the gas company relying on its contract rights under said ordi-

nances, built, maintained and operated and still maintains, and operates existing gas works within the city of Cedar Rapids, expending thereon and therein large sums of money. It has from time to time made large additions to and betterments thereof, and has purchased real estate for the location of the plant.

That, in accordance with the terms and conditions of said ordinances it has been for many years, and is still engaged in furnishing gas to large numbers of the residents of Cedar Rapids, and persons in the vicinity thereof.

That although the said contract authorized the gas company to charge $1.80 per thousand cubic feet, that as rapidly as the efficiency of the service and extensions of the plant would warrant, the gas company has reduced the price of gas to $1.25 per thousand cubic feet with a discount to consumers of ten cents per thousand cubic feet if paid on or before the 10th day of the month succeeding consumption. (Record 3, Or. 5-6).

That the gas company never received to exceed a fair income upon its investments, and that the said rates so charged did not pay during the last fiscal year (1906) more than six per cent on the actual value of the investment after operating expenses, renewals and other fixed charges were paid, and will not during the current year pay more than a like amount, and that a reasonable estimate of the future earnings of the next three fiscal years under present rates is not to exceed six per cent on the actual and reasonable value of the plant.

That the actual appraised value of the company's physical properties in the city of Cedar Rapids is $368,000, and this amount does not include any part of the plant used for the supplying of patrons in the Town of Kenwood or the City of Marion, and does not include anything for going value or good will of plaintiff's business, nor any value for the plaintiff's franchise. That in addition to the said investment in physical properties, it is necessary for the company to keep constantly invested as a working capital the sum of $25,000, making in all an actual investment of approximately $400,000, which the company has in use in the service of its patrons, and upon which it is entitled to earn dividends after its expenses and fixed charges are paid.

That the company's income for the year 1906 was (Record 4. Or. 7):

For sale of gas	$ 95,290.94
From all other sources, including coke and tar	17,387.58
Total	$112,678.52

That the plaintiff's actual and necessary fixed charges were for the year 1906, as follows:

Manufacture of gas	$61,009.31	
Office expense and salaries	7,795.70	
Taxes and interest	6,849.03	
Setting of stoves and meters	5,943.83	
Repairs, renewals and extensions	13,000.00	
Total expenses	$94,597.87	94,597.87
Leaving a net income of		$ 18,080.65

That to have furnished gas at the rate of ninety cents per thousand cubic feet, as provided in the ordinance, (Exhibit "C" Record 9, Or. 16) plaintiff would have sustained an actual loss for the year 1906 of more than $3,400.00. That by reason of the fact that the company had no damage suits, claims or extra charges to pay, its expenses for 1906 were less than could be reasonably expected for 1907. That the price of coal, which is the largest item of expense in connection with the manufacture of gas had advanced over the price of 1906, ten per cent, and will cost for 1907 $4,000 in excess of the cost for 1906, and that the total costs of manufacturing gas for the year 1907 will exceed that of 1906 by $6,000.

The company further alleges (Record 5, Or. 9) that on the 21st day of December, 1906, the city enacted Ordinance No. 752 (Record 9, Or. 16), and that it is void and of no effect as against plaintiff for the following reasons:

(a). That said ordinance proposes to fix the rate per thousand cubic feet for gas at ninety cents, which is a reduction of more than twenty-five per cent of the present rates, and that the present rates are fixed by contract between the company and the city, and that said rates as so fixed are in all cases reasonably just and not in excess of those named in plaintiff's franchise and amendments thereof, and that the city has no power or authority to put in force any ordinance that will affect in any way the rates established and agreed upon in said franchise.

(b). That to put in effect said Ordinance No. 752, will work a reduction of more than twenty-five per cent of the company's gross income and earnings, and will require the company to operate its plant and works at a loss, and actually deprive the company of a reasonable income and of any income upon the capital and money invested in its plant, and that the ordinance is unreasonable and oppressive.

(c). That the said Ordinance No. 752 is in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States, in that if enforced, it will deprive the company of the equal protection of the law and deprive the company of its property without due process

of law, and without compensation therefor, by depriving the company of earnings sufficient to pay dividends or compensation upon its investment to its stockholders, or otherwise, as hereinbefore and also as in hereafter stated and set forth.

That said Ordinance No. 752 if enforced is in violation of Section 10 Article I of the Constitution of the United States, in that it impairs the obligation of existing contracts between the company and the city, as hereinbefore set forth. (Record 6, Or. 10).

Plaintiff further alleges, that the enforcement of said Ordinance No. 752 fixing the rate for gas at ninety cents per thousand cubic feet will produce great and irreparable injury to the company, and will involve it in a multitude of suits and litigations, and greatly harass and injure it in the prosecution of its business, and that the company is without adequate remedy at law, and can only obtain full and adequate relief by and through this equitable suit.

The Company prays for a temporary writ of injunction, restraining the city and its officers and agents from enforcing the said ordinance, and for a decree setting aside and declaring the said ordinance void, and for such other, further, and different relief as is consistent with equity and good conscience.

b. *The Answer.*

To this petition, the defendants answered (Record 10, Or. 17), admitting the corporate existence of the plaintiff in error, and that it is engaged in furnishing gas to the city and its inhabitants, and admitting the corporate existence of the defendant in error; also admitting the adoption by the city of the ordinances constituting the franchise of the plaintiff in error.

Defendants also admit the enactment of and intention to enforce Ordinance No. 752. They deny generally all other allegations in the petition, and specifically deny that said Ordinance would deprive plaintiff of its property without due process of law, and allege that the said Ordinance No. 752 fixing the price of gas at ninety cents per thousand cubic feet is reasonable; that the actual physical properties of the plaintiff are not worth to exceed $200,000; that the actual cost of manufacturing gas in the holder in Cedar Rapids is not to exceed thirty-five cents per thousand cubic feet, that the cost of distribution thereof including naintenance, and office expenses, will not exceed twenty cents per thousand cubic feet, and that by intelligent and economical management, gas can be produced and distributed in Cedar Rapids by plaintiff's works at ninety cents per thousand cubic feet, and pay a fair return on the actual value of the works, in addition to the reasonable necessary expense of operating, including necessary

expenses for maintenance. Wherefore the defendants pray that plaintiff's petition be dismissed.

III

HOW THE ISSUES WERE DECIDED

1. *District Court.*

On the issues, as hereinbefore set forth, this cause came on for trial (Record 11, Or. 19) before the Honorable F. O. Ellison, sole judge presiding, on the 14th day of November, 1907, and on the 30th day of January, 1908, (Record 443, Or. 741) the said Judge rendered his decision, finding:

1st. That the City Council had power and authority to regulate and fix rates to be charged for gas within said city.

2nd. That the evidence fails to show that the rates fixed by said ordinance are unjust or unreasonable, or that the enforcement thereof will be equivalent to the taking of plaintiff's property for public use without just compensation, or would deprive plaintiff of its property without due process of law, or that said ordinance is confiscatory in its effect, or that the enforcement thereof would deprive the plaintiff of any of its constitutional rights.

The court further finds that the rates fixed in the ordinance are just and reasonable, and the temporary writ of injunction is dissolved, and the petition is dismissed and decree is entered accordingly. To all of which the plaintiff excepted.

That on the same day, judgment was entered against the plaintiff for costs, and the plaintiff excepted.

2. *Supreme Court of Iowa.*

On the 30th day of January, 1908 (Record 459, Or. 756), the plaintiff in error appealed from said decree to the Supreme Court of Iowa, which court rendered its opinion in said cause on the 4th day of May, 1909 (Record 641-654, Or. 1069-1091), and decree was entered affirming the decree of the District Court (Record 654-657, Or. 1091-1095). A petition for re-hearing was overruled (Record 656, Or. 1093), and thereupon the restraining orders theretofore granted by the District Court and the Supreme Court of Iowa, were continued in force until the final determination of said cause in the Supreme Court of the United States, or until otherwise ordered by said court, or a justice thereof.

IV

WRIT OF ERROR

Thereupon proper petition for a writ of error from the Supreme

Court of the United States to the Supreme Court of Iowa was presented by the plaintiff in error to the Honorable William D. Evans, Chief Justice of the Supreme Court of Iowa (Record 658-661, Or. 1096-1101) and was granted (Record 662, Or. 1103). The writ was issued (Record 662-3, Or. 1105-6) by Edward R. Mason, Clerk of the United States for the Southern District of Iowa. Bond was duly filed and approved (Record 671, Or. 1120-1). Citation was duly served (Record 672-3, Or. 1123-5). The Clerk of the Supreme Court of Iowa duly certified the record in said cause to the Supreme Court of the United States (Record 673).

V

ERRORS RELIED ON FOR REVERSAL

At the time of filing its petition for a writ of error, the plaintiff in error filed with the Clerk of the Supreme Court of Iowa, assignments of error (Record 664-670), and now respectfully submits that in the record, proceedings, final judgment and decree of the Supreme Court of Iowa in said cause, there is manifest error, to-wit:

Assignment No. 1. The court erred in holding that the provision of plaintiff's franchise granted by Ordinance No. 427 of the City of Cedar Rapids, Iowa, as follows:

"That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20c per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption." did not constitute a contract, between the plaintiff and the City of Cedar Rapids, and in holding that the obligation thereof was not impaired by Ordinance No. 752, because said Ordinance No. 752 fixed the price of gas, as follows:

"Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation, shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city," and thus destroyed the provision of the franchise allowing the plaintiff in error to charge such a rate as would admit of allowing to consumers a substantial discount on all bills for prompt payment. That said provision for discount for prompt payment of bills is a valuable contract right, the obligation of which is impaired by said Ordinance No. 752 and by the decision of the Supreme Court of Iowa holding the same to be valid, in violation of Section 10 of Article I of the Constitution of the United States.

Assignment No. 2 The court erred in refusing to hold that a con-

tract existed between the City of Cedar Rapids and plaintiff permitting it to charge a sufficient rate to permit of a discount of 20c per thousand feet for prompt payment, and that the ordinance fixing the price to be charged for gas at 90c per thousand, without making provision for this discount was an impairment of the obligation of such contract and void as in violation of Section 10 of Article I of the Constitution of the United States.

Assignment No. 3. The court erred in holding that because the plant was built up in part from and out of its previous earnings, that it was not entitled to earn and receive a fair return or any return upon the thus enhanced value of the plant at the time of fixing the 90c rate, the said holding in effect being the taking of plaintiff's property for public use without compensation and without due process of law, in violation of Section I of the 14th Amendment to the Constitution of the United States.

Assignment No. 4. The court erred in finding the ordinance fixing the price of gas at 90c per thousand feet reasonable, by refusing to include as a part of plaintiff's property used in the service of the public, the item of $25,000 dollars of working capital, which it found was necessarily invested in the service of the public, the said holding in effect being the taking of said property without due process of law and without compensation.

Assignment No. 5. The court erred in finding the ordinance fixing the price of gas at 90c per thousand feet reasonable by refusing to include as a part of plaintiff's property used in the service of the public one hundred thousand dollars on account of the item known as going value, which the said court expressly found was property, and part of the investment, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor, in violation of Section I of the 14th Amendment to the Constitution of the United States.

Assignment No. 6. The court erred in finding the ordinance in controversy valid, by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income, the item of valuation known as the Annex and being twenty thousand dollars' worth of real estate, and in holding that the same was unnecessary as an investment in the said business, the said holding in effect being the taking of property without due process of law and without compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 7. The court erred in finding that the said ordinance was reasonable and valid, by refusing to include as a part of plaintiff's property used in the service of the public and upon which

it was entitled to earn a reasonable income the item of valuation known as the old purifiers, the same being capital invested in the plant and withdrawn from the use of the stockholders, the said holding in effect being the taking of said property without due process of law and without compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 8. The court erred in finding the said ordinance in controversy to be reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income the item of valuation known as street mains, and in reducing the value of the street mains from that shown by the evidence, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor.

Assignment No. 9. The court erred in finding the said ordinance valid by excluding the item of $5,000.00 known as the value of the high pressure main to the city limits and connected with the Marion system. The said exclusion of said valuation being a taking of said property without due process of law and without compensation therefor.

Assignment No. 10. The court erred in finding the said ordinance in controversy reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public, and upon which it was entitled to earn a reasonable income the item of valuation known and designated upon the trial as "The Paving over mains," of $43,580.00. The said holding in effect being the taking of said item of property for public use without due process of law and without compensation therefor first being made.

Assignment No. 11. The court erred in finding the said ordinance in controversy valid by excluding the items of property known and designated upon the trial as Engineering expenses, interest on capital during construction and promotion, all of which items were proper in determining the present value of the said plant and the amount of plaintiff's investment in the service of the public, the said ruling in effect being the taking of so much of plaintiff's property for public use without due process of law and without compensation.

Assignment No. 12. The court erred in excluding large items of plaintiff's specific property from consideration in determining the value of the plant, among the same being the cost of paving over mains, cost of high pressure main to city limits, value of real estate known as "Annex," going value of the plant, engineering expenses, interest on capital, and organization expenses, and thereby found that the ordinance is reasonable, whereas, if it had included said property, which it should have included, it must have found the said ordinance unrea-

sonable, and by thus excluding the said property the said finding in effect is a taking of plaintiff's said property so excluded from said valuation without due process of law and without compensation.

Assignment No. 13. The court erred in holding said Ordinance No. 752 to be valid by excluding from the expense of operation of plaintiff's said gas plant and from the cost of manufacture and distribution of gas, the item of depreciation as testified to by witnesses for plaintiff in error, being more than 10c per M. c. f. per annum, and in substituting therefor a depreciation of 5c per M. c. f. per annum, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of Sec. I of the 14th Amendment to the Constitution of the United States.

Assignment No. 14. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following item: For the year 1905, $5,627.00 for renewal of benches, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 15. The court erred in holding said Ordinance No. 752 valid, by excluding from the cost of the manufacture and distribution of gas, the following items: Interest on Bonds, 1905, $3,788.75; 1906, $3,750.00 (R. 604); the interest on loans, amounting to $142.29 for the year 1905, and $866.17 for the year 1906; which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 16. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following items: Taxes on the "Annex," amounting to $175.60 for the year 1905, and $185.00 for the year 1906, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 17. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of manufacture and

distribution of gas, the following amounts charged off by the plaintiff in error on its books as depreciation:

1902	$ 7,291.53
1903	16,740.45
1904	8,833.52
1905	5,568.29
1906	7,669.18

the said several items being the difference between the depreciation charged off by the plaintiff in error on its books for each of said years and 5c per M. c. f. per annum of gas manufactured by the plaintiff in error, said 5c per M. c. f. depreciation being as testified to by the witness Hall, which testimony was received under objections, as set forth in assignments of error numbered 27, 28, 29 and 30.

Assignment No. 18. The court erred in sustaining the said ordinance in controversy on the ground that plaintiff has an exclusive franchise and in holding that a lower rate would be and is reasonable because of the exclusive franchise, and the said ruling has the effect to deprive the plaintiff of its property without due process of law and without compensation.

Assignment No. 19. The court erred in holding the said ordinance would afford plaintiff a reasonable income upon the property invested in the public service, by assuming that the said plant would earn large amounts under said ordinance in excess of what it was in fact earning as shown by the record and by including in its assumed earnings large items upon which and in support of which there was no evidence.

Assignment No. 20. The court erred in holding that if the plaintiff would receive, under the 90c ordinance, any compensation for the use of its property the ordinance is valid.

Assignment No. 21. The court erred in holding that it did not constitute a taking of plaintiff's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

Assignment No. 22. The court erred in not holding that plaintiff is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

Assignment No. 23. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per thousand cubic feet deprives plaintiff of a fair and reasonable return upon its property used in the service of the public.

Assignment No. 24. The court erred in not holding and finding

that the ordinance is void, because if enforced it will deprive plaintiff of a fair and reasonable income or any income upon its property used in the public service.

Assignment No. 25. The court erred in not holding and finding that the ordinance fixing the 90c rate is in violation of Section 1 of the 14th Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

Assignment No. 26. The court erred in not finding from the whole of the evidence in the case that 90c per M. c. f. for gas would not enable plaintiff to earn fair and reasonable compensation upon its property.

Assignment No. 27. The record in the cause shows that James Hall an expert accountant, having no knowledge of the gas business, testified as a witness for defendants in error, as to the value of the property of the plaintiff in error and the cost of the manufacture and distribution of gas, and as to the proper amount of depreciation to be charged off annually as a part thereof, all over the objections of plaintiff in error that said witness was not qualified and not competent to give such testimony, and the court erred in the admission of such testimony and giving weight thereto, thereby holding said 90c rate ordinance valid and depriving plaintiff in error of its property without due process of law and without just compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States. Hall's testimony (R. 300 *et seq.* and objections R. 440).

Assignment No. 28. Mr. James Hall, a witness for defendants in error and an accountant, examined the books of account of the plaintiff in error and produced as the report of said examination Exhibit K-2, as identified in the record 585. This exhibit with the schedules attached purported to show the cost of manufacturing and distributing gas in Cedar Rapids, Iowa. It is based in part on data obtained from the books of plaintiff in error and in part on figures substituted by the witness which he says are in his opinion the proper figures (R. 302-305). The depreciation charged off on the company's books was about 10c per M.c.f. per annum of gas manufactured. This amount was testified to as fair by several practical gas men. Mr. Hall substituted in place of this amount 5c per M. c. f. of gas manufactured per annum, and testified that in his opinion 5c per M. c. f. was the proper amount of depreciation. Mr. Hall testified he had no practical knowledge of the gas business (R. 303). The plaintiff preserved objections to Mr. Hall's testimony on the ground that he was not qualified and competent to give an opinion as to depreciation of a gas plant and that his testimony, including said Exhibit K-2, was not competent; the same being mere opinions and conclusions of the witness as to matters of gas engineer-

ing and the practical operation of a gas plant, of which he had no knowledge (R. 440).

The supreme court erred in receiving and giving weight to such testimony, and holding on such testimony that the ordinance of the city of Cedar Rapids fixing the price of gas at 90c per M. c. f. was valid, and did not deprive plaintiff in error of its property without just compensation and without due process of law.

Assignment No. 29. The court erred in admitting in evidence the statement of the witness Hall in said Exhibit K-2, as follows: (R. 588).

"Gas can be supplied to consumers of the city of Cedar Rapids at a price of 90c per M. c. f. and at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies," over the objections of the plaintiff in error that the same was incompetent and that the witness was incompetent and that the witness was incompetent and not qualified, and in finding on such evidence that the ordinance of the said city of Cedar Rapids, fixing the price of gas at 90c per M. c. f. was valid, thus depriving plaintiff in error of its property without just compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

Assignment No. 30. Mr. Edward W. Bemis, a witness for the defendants in error, testified, that he had no practical knowledge of the construction or operation of a gas plant, but that he had made a study of the cost of manufacturing and distribution of gas, having been employed as an expert witness in a number of cases. Mr. Bemis testified as follows: (R. 364).

> "I have noticed the tables on Exhibit 'K-2' showing the average cost of gas for five years at Cedar Rapids to be 64.04 cents per M. c. f.
>
> "Q. What have you to say as to whether those figures are reasonable or unreasonable?
>
> "Objected to by plaintiff as incompetent and calling for an improper method of getting at the price of gas, and because the witness is not a practical gas man or engineer, but his knowledge is wholly theoretical, and the witness is not competent to testify as to the cost of gas. By agreement, this objection is to apply to all questions asked this witness as to the cost of gas. (R. 364).
>
> "A. Taking the operating expense as given by Mr. Hall for five years at 64.04 cents, then to that I add an allowance for bad debts if there is no discount for prompt payment. I take that at .08c, because such were the losses from bad debts of the Peoples Gas Company in Cleveland in 1905. The allowance for insurance and claims I have given at .093c, that being the experience of all the Massachusetts companies for the last three years, as computed from the returns of 60 companies. The allowance for bad debts and insurance would make 1.73c, which, added to Mr. Hall's 64.04c

would give a gross possible cost under the new ordinance of 65.77c. Then there are certain deductions that I have made, saving on office expenses of at least 2c, $2,000.00, saving on leakage of a possible 2c, saving on depreciation and repairs on manufacturing plant used for the making of gas for Marion ½c, or a total deduction of 4.5c; this from the gross cost would leave the net cost 61.27c, and that on the sales of 91,331,000 c. f. would be a profit of $26,239.40, which would leave for possible dividends $22,489.40, after paying interest."

That the court erred in receiving the above evidence of the said witness over the objections of the plaintiff in error, and in giving weight to such evidence, and finding that gas could be manufactured and sold in Cedar Rapids at a cost of about 68.12c per M. c. f., thus, in effect, depriving the plaintiff in error of its property without due process of law and without just compensation, in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

VI

STATEMENT OF THE FACTS

DIVISION A

Statement of the Facts on which the Question Arises as to the Impairment of the Obligation of the Contract, in Violation of Section 10 of Article I of the Constitution of the United States.

1.

STATUTES AND ORDINANCES

Section 1619 of the Code of Iowa, is as follows:

"*Legislative control.* The articles of incorporation, by-laws, rules and regulations of corporations hereafter organized under the provisions of this title, or whose organization may be adopted or amended hereunder, shall at all times be subject to legislative control, and may be at any time altered, abridged or set aside by law, and every franchise obtained, used or enjoyed by such corporation may be regulated, withheld, or be subject to conditions imposed upon the enjoyment thereof, whenever the general assembly shall deem necessary for the public good."

The General Assembly of Iowa has never enacted any law directly affecting the franchises of public service corporations, but it conferred on municipal corporations the power to regulate the rent or rate for water, gas, or power, in section 725 of the Code of Iowa, which is as follows:

"*Regulation of rates and service.* They shall have power to require every individual or private corporation operating such works or plant, subject to reasonable rules and regulations, to furnish any person applying therefor, along the line of its pipes, mains, wires, or other conduits, with gas, water, light or power, and to supply said city or town with water for fire protection, and with gas, water, light or power for other necessary public purposes, and to regulate and fix the rent or rate for water, gas, light or power; to regulate and fix the rents or rates of water, gas and electric light or power; to regulate and fix the charges for water meters, gas meters, electric light or power meters, or other device or means necessary for determining the consumption of water, gas, electric light or power, and these powers shall not be abridged by ordinance, resolution or contract."

And in Section 720 of the Code of Iowa, the General Assembly provided, as follows:

"They (Municipal corporations) may also grant to individuals or private corporations the authority to erect and maintain such works or plants for a term of not more than twenty-five years, and may renew or extend the term of such grant; but no exclusive franchise shall be thus granted, extended or renewed."

These were the only laws of Iowa bearing on the question in effect at the time of the granting to the plaintiff in error of the franchise under which it is operating (Exhibit B; R. 8), and at the time of the adoption by the city of the 90c ordinance.

The first section of this ordinance grants to the company the right and privilege to use the streets, avenues, and alleys of the city for the purpose of laying down pipes for the conveyance of gas, etc.

Section 2 relates to opening streets, and is immaterial.

Section 3 is as follows: "That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more cubic feet per month the discount shall be 45 cents per thousand cubic feet for all purposes, if paid on the same terms and conditions above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city offices the price shall be 10 cents per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

Section 4 obligates the company to furnish all gas required by the city and the inhabitants thereof, and to permanently maintain good, complete and substantial gas works equal to the best in any city of the

same or less population in the state, and to furnish to the city and the inhabitants thereof as good a quality of gas as that furnished by any other gas company in the state. It also provides that the company shall at all times conform with, submit to, and carry out any ordinance now in force, or that may hereafter be enacted not inconsistent therewith for *regulating or controlling the streets, avenues, and alleys by said city.*

An important and valuable feature of this franchise is found in the following language:

> "THAT IN CONSIDERATION OF THE PRIVILEGES HEREIN GRANTED TO SAID COMPANY, IT SHALL FURNISH TO THE INHABITANTS OF SAID CITY GAS FOR LIGHTING AT A PRICE NOT TO EXCEED $1.80 PER THOUSAND CUBIC FEET AND 20 CENTS PER THOUSAND CUBIC FEET DISCOUNT IF CONSUMERS PAY ON OR BEFORE THE 10th OF EACH MONTH AFTER CONSUMPTION."

The maximum price fixed for gas in the ordinance to consumers who pay promptly is $1.60 per thousand cubic feet. Provision is made for collecting bills by allowing a discount. *This discount provision is mandatory.*

The ordinance fixing the ninety cent rate is as follows, and undeniably eliminates the discount provision:

> "Ordinance No. 752
>
> "An Ordinance Regulating The Rates to Be Charged For Gas and Providing The Penalty For the Violation Thereof:
>
> "Be It Ordained By The City Council, Of The City of Cedar Rapids, Iowa:
>
> "Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city.
>
> "Sec. 2. Any person, firm or corporation, violating any of the provisions of this ordinance, shall, upon conviction thereof, be punished by fine of not less than Ten Dollars ($10.00) or more than One Hundred Dollars ($100.00)."

The company from time to time prior to the enactment of the 90-cent ordinance voluntarily reduced the rate charged for gas until for the two years preceding the enactment of the ninety-cent ordinance, the company was charging $1.25 per thousand cubic feet for gas with 10 cents per thousand cubic feet discount if paid for on or before the 10th of the month succeeding the consumption. (R. 174).

On the record in this case, it is perfectly plain that the company cannot allow a discount below ninety cents per thousand cubic feet for prompt payment and earn any return on the admitted value of its investment.

The Supreme Court of Iowa says in its opinion, after discussing the rate per cent of income which the plaintiff would probably earn on the business of 1907: (R. 652).

> "It may be that the margin is not large in view of the contingency of increased cost of collections and the risks incident to all enterprises of this kind. But we are not fixing the rates. That is purely a legislative function. The court's duty ends when it has found that the rates are not so low as clearly to be confiscatory in character."

The Petition (R. 6, Or. 10) alleges:

> "And said ordinance passed December 21, 1906 (the 90-cent ordinance) if enforced is in violation of Section 10 of Article 1 of the Constitution of the United States, and that it impairs the obligation of existing contracts between plaintiff and defendant, the City of Cedar Rapids, Iowa, as hereinbefore set forth."

The plaintiff in error, in the Supreme Court of Iowa assigned among other errors, the following: (R. 660).

> "Error 8. The court erred in not holding that the ordinance fixing the rate of ninety cents is in violation of Section 21 of Article 1 of the Constitution of Iowa, and of Section 10 of Article 1 of the Constitution of the United States, because said ordinance impairs the obligation of contracts between the appellant and the city of Cedar Rapids."

There is presented on the record in this case (R. 661) the question, among others, whether the said ordinance fixing the rate to be charged for gas was an impairment of the obligations of contracts existing between the plaintiff in error and the city of Cedar Rapids, being the franchises granted by said city to plaintiff in error, and under which it was acting. Errors assigned in this court page 8 this Brief.

The Supreme Court of Iowa, in its opinion, disposes of this question, as follows; and in affirming the judgment and decree of the lower court holds that the said ninety cent ordinance does not impair the obligation of the contract contained in the franchise: (R. 648).

> "Under the former ordinance 10c per M. c. f. was exacted in event of failure to pay by the 10th of the month. The ordinance assailed fixes a level price and appellant contends that the elimination of the discount for prompt payment will entail an expense of 5c per M. c. f. for collecting gas bills. This assumes that an equally efficient method of inducing payment may not be adopted by the company. That such corporations may adopt rules and

regulations for the transaction of their business is well settled by authority.

"*Shephard vs. Gas Light Company*, 6 Wis. 539; 70 Am. D. 479.

"*Tacoma Hotel Company vs. Tacoma Water Company*, 3 Wash. 797; 14 L. R. A. 669.

"*Harbison vs. Knoxville Water Company*, 53 S. W. (Tenn.) 933.

"*Williams vs. Mutual Gas Co.* 18 N. W. (Mich.) 236.

"In each of these cases a rule requiring security or deposit of money in advance was approved. Of course such rules must be reasonable and not impose an undue burden on the consumer. In *People v. Manhattan Gas Light Company*, 45 Barb. (N. Y.) 136, a rule that the company would refuse to furnish gas to one who had failed to pay his past due bill was held to be reasonable, but in *Crumley v. Water Co.*, 99 Ten. 420; 41 S. W. 1058, it seems to have been held that a water company may not refuse to furnish water on the ground that the applicant is indebted for a previous supply for which he is unable or refuses to pay. To the same effect see, *Gas Light Company v. Colliday*, 25 Md. 1. In *American Water Works Company v. State ex rel., Walker*, 64 N. W. (Neb.) 710, the rule required water rents to be paid on the first days of January and July of each year in advance at the company's office and 'if not paid within 30 days after they fall due the water will be turned off and not turned on until all back rents are paid, increasing the charge by $1.00 for turning water on and off.' The court, while conceding the power of the company to make all reasonable regulations, held that that part of the rule exacting $1.00 as a condition precedent to turning on again unreasonable and void. See also, *State v. Neb. Tel. Co.* 17 Neb. 126; 22 N. W. 237. In *Water Company v. Adams*, 24 Atl. (Me.) a rule that users of water liable for rent for the whole year whether actually used for the length of time but not requiring them to pay in advance, was held to be unreasonable. In *Shephard v. Gas Light Co.* supra, the court held that the company might not attach a penalty for the violation of its rules. In *State v. Butte City Water Company*, 56 Am. St. 574 — decided that payment in advance might be exacted but that the company could not refuse to furnish water to others than owners of property. In *Miller vs. Wilkesbarre Gas Co.* 206 Pa. St. 254; 55 Atl. 974, a rule that supply be stopped unless all arrearages be paid whether owing by tenant in possession or his predecessor was approved but held not to be binding in the absence of notice. In *Owensboro Gas Light Company vs. Hildebrand*, 42 S. W. 851, a rule requiring the deposit of $20 in advance was declared reasonable. To the same effect see *Northern Colorado, Etc. Co. vs. Richards*, 22 Colo. 450; 45 Pac. 423 W. See also, *Thornton on Oil & Gas*, Sec. 541, where decisions are collected relating to the reasonableness of amounts required to be deposited in advance. The company may not base a rule on the theory that the people as a whole are dishonest but it has the right to adopt a rule which, while giving the honest citi-

zen what he pays for will prevent the dishonest from getting that which he will never pay for. See *Harbison vs. Knoxville Water Co.*, supra. That the company may establish a rule exacting payment in advance in reasonable amounts or the deposit of security, at least, is fully settled by the authorities, and it would seem that the requirement of security or deposit of money in advance would be quite as effective in enforcing prompt payments, and more so in avoiding bad debts than an increase in price upon failure to pay by a time stated, and it does not appear that collecting through such method or some other reasonable method that may be devised not obnoxious to the ordinance would entail greater expense on the company than under that of allowing discounts. At any rate, we cannot assume in advance that consumers will not comply with such reasonable rules for the security of the company as may be embodied in their contracts nor in the absence of satisfactory proof that unusual expense will be incurred in collecting the price of the gas sold."

The city, in the operation of its own waterworks, does not charge a flat rate, but allows a discount of fifteen per cent for prompt payment, and Mr. Fox, its superintendent, fully explains the advantages of this method. (R. 274-275).

In effect, the Supreme Court of Iowa holds that, although the franchise authorized and provided for a discount for prompt payment of bills on or before the 10th of the month succeeding consumption, *yet the city of Cedar Rapids had the power to take away from the plaintiff in error that right and to leave the company to the difficult and doubtful methods* of shutting off the gas, or exacting payment in advance, or the deposit of security.

2.

Contention of Plaintiff in Error

THE CONTENTION OF THE PLAINTIFF IN ERROR IS THAT THE DISCOUNT PROVISION OF THE FRANCHISE CONTRACT IS A VALUABLE RIGHT AND IS ENTIRELY SEPARATE AND APART FROM THE MATTER OF THE RATES, AND WHILE ADMITTING THAT THE CITY HAD THE RIGHT TO ESTABLISH A REASONABLE RATE TO BE CHARGED FOR GAS, THE PLAINTIFF IN ERROR INSISTS THAT THE CITY HAD NO RIGHT TO DEPRIVE THE PLAINTIFF IN ERROR OF THE MEANS OF COLLECTING ITS BILLS BY A SYSTEM OF DISCOUNTS AUTHORIZED AND PROVIDED FOR IN THE FRANCHISE, AND THAT IN SO DOING, IN THE ENACTMENT OF THE NINETY CENT ORDINANCE, WHICH FIXES A FLAT RATE AND PROVIDES A PENALTY FOR COLLECTING ANY MORE DIRECTLY OR IN-

DIRECTLY, THE CITY HAS EXCEEDED ITS POWERS AND HAS CLEARLY IMPAIRED THE OBLIGATION OF ITS CONTRACT WITH PLAINTIFF IN ERROR IN CONTRAVENTION OF SECTION 10, ARTICLE 1 OF THE CONSTITUTION OF THE UNITED STATES.

3.

TESTIMONY OF WITNESSES AS TO VALUE OF DISCOUNT PROVISION

E. G. PRATT (R. 59, Or. 93), says:

"The consumer is expected to pay for the gas consumed last month by the 10th of this month, and gets a discount of ten cents a thousand feet if he does so, and usually and practically all of the customers take advantage of the discount."

MR. E. G. GOWDERY says: (R. 71).

"I believe it is necessary in conducting this business to provide for a discount. If no discount is provided, it would add to the expense of collecting, and my experience and study is that it costs more money to have collectors going about than it does to make a discount as an inducement to pay."

MR. J. C. MARKLEY (R. 91) testifies:

"It is my opinion that it is necessary for the company to provide some method of discount in order to get a prompt payment of gas bills. If a discount system were not in use, the company would have difficulty in getting its money and in making its collections, and it would have to employ collectors to bring the money in which would be an extra expense. In one of our plants, where we have no discount for prompt payment, the company is embarrassed by not having its funds."

G. M. AVERILL (R. 155, Or. 254), says:

"I believe it is necessary to give a discount for prompt payment. If the ordinance does not provide for a discount, or does not provide for a penalty for failure to pay on the 10th of the month, we will, in my judgment, have to provide a discount or very materially increase office expenses of collecting the bills. I could not say how much until we tried. When I used to collect the bills, we had about five hundred meters, and it took me about all that I could do to collect the 500 bills. There are now 4,000 bills; that would take eight collectors, instead of one, and eight collectors at $50.00 a month would be approximately 4c per M. c. f. There was a time when, while we gave a discount, we went around to collect the bill. We would have also to increase our working capital, because we would be longer in getting our money back; our payments would not come in until they had to, or until we shut off the gas. Then there would be a heavy loss in the way of bad debts. They would not have the incentive to come in be-

fore the 10th of the month and save the discount, and instead of losing forty days' gas, we would lose two months, because it would be the end of the month before we got to the people who did not pay.

"It would be almost impossible to adopt a rule for shutting off the gas on the 10th of the month, or to do that to any great extent, and we would not have men and wagons enough to shut off 4,000 meters if they did not pay. The shutting off of the gas is never charged to the consumer. The company would be at war with their consumers all the time, and even now the shutting off of a consumers' meter always causes more or less unpleasantness."

and he also says (R. 162, Or. 267):

"I understand the condition with reference to this 90c ordinance to be that, the company might make such rules and regulations as it pleases in respect to the collection of the bills except that it cannot ask any price above 90c. I don't believe we could require a deposit in advance in all cases — we do require guarantees in certain instances where persons using the gas are doubtful pay, we require a reference or guarantee, and where it is for a company we ask for the names of the officers of the company. We have never put in force a rule requiring a minimum deposit from each customer each month. We have tried the plan of asking for deposits from doubtful persons, but have not always received them."

"Q. (Cross-examination, R. 162). You never tried the system of leaving your bills at a store or place of that kind in different parts of the city for collection?"

"A. No, sir. We have made the collections by sending collectors around, and by the present system, these are the only two methods that we have tried. When our office was at the works we offered a discount in addition to going after the money, after we had been up town a year or so, we made a reduction in the price and the discount if they came to the office and paid within ten days."

"The express companies have had the matter up with reference to collecting our gas bills, and they want 5c for each bill so collected. This would amount to $2,400 a year for collection all our bills, and their idea is that the people would go to their offices in the outlying districts and leave the money, and they would receipt the bill. They would not collect the bill, but simply transmit such money as they received." (R. 175).

GEORGE McLEAN (R. 207) says:

"In my judgment, based on my experience, it is not practical to run the gas business without providing a discount for the prompt payment of bills. I had to abandon any other method of collecting because of money lost. It was too expensive. When we began we were losing 7c per M. c. f. sold. When we had money outstanding we would take the bills out and they would tell us to come again, and we would have to go again, and it cost

us about 7c per M. c. f. of gas sold, and that was reduced by putting in the discount feature. You would not get nearly as prompt payment, in my judgment, and from my experience, if you would adopt what is termed the turn-off policy as you would to give a discount and you would offend a large portion of your customers, you would lose very much more in bills than you do at present, but that would not be the largest loss. You would lose a large volume of business. In the first years of my experience it cost about 7c per M. c. f. of gas sold to collect the bills — for coke and gas bills."

C. J. FOX

Superintendent of the Cedar Rapids Water Works, owned and operated by the city, and a witness for the defendants in error, testified as follows: (R. 276).

"To our customers having meters we give discount of 15 per cent, which is to induce prompt payment more particularly than anything else. From my experience, if you did not give a discount, it would require something more, some extra sum in order to collect the money, but there are two points there to be considered. If you shut off the water on the 10th of the month, quite often you make ill feelings. In case of the gas company in competition with electricity, I would think that if the gas company was harsh in its methods with reference to turning off the gas for non-payment it would have a tendency to create war between the company and customers and they would quit gas and take electricity for domestic purposes. I would say that a proper discount given on the rate is a very nice way of collecting the rents. I do dislike to cut the water off from a man's premises, and I know if he did it to me I would never forgive him. It is not good policy to cut the water off and it does not tend to good feelings. It is my experience that in dealing with the public it is best to keep them all feeling good, and it makes quite a difference with the business all the way through and this is to the financial interest of the company. From a financial standpoint it is quite customary and proper to give a discount for prompt payment, but I have never had experience in the other way, and I couldn't say how it would work."

"In our business (R. 275) we have 4,200 customers that get 15% discount on the meters. Speaking of the meter rates, I find in our case that there is $300 out of $2,600 each month that has not been paid so as to get the 15% discount. We charge $1.00 for turning the water off which the customer pays, and I think this amount would pay the expense to the company of doing the work. We are earning $60,000 a year and giving 15% discount, which is $9,000. It would cost about half the discount to enforce the collections."

"Q. Now, assuming that the ordinance in controversy in the present case provides that the company shall furnish at all times to its patrons gas at 90c per M. c. f. and makes no provision for a

penalty for failure to make prompt payment, in your judgment would it not be necessary to make a discount below the 90c, or to add something to its expense for collecting?"

"A. I would say this, that it would be necessary to have either one or the other. It is a good thing to have both, if you can't cut off on the one hand, then the penalty would have to come." (R. 511).

"I believe the discount the most popular system of collecting bills and the most largely used by corporations, and I would consider it to the financial interest of the company to make discount for prompt payment." (R. 277).

DIVISION B

Statement of the Facts on which the Question Arises as to the Reasonableness of the Ninety Cent Rate under Section 1 of the 14th Amendment to the Constitution of the United States.

1.

HISTORY AND ORGANIZATION OF THE COMPANY

a. *Organization and Capitalization.*

The Cedar Rapids Gas Light Company was organized in 1872 (R. 140-141, Exhibit 33), with a capital stock issue of $150,000, which has never been increased.

b. *Dividends Paid.*

The following are the dividends paid by the company from its organization to and including the year 1906 on a capitalization of $150,000:

1871	0	
1872	0	
1873	0	(Ex. 33, R. 140-2)
1874	0	(Ex. 33, Record 140-2)
1875	0	(Ex. 33, Record 140-2)
1876	0	(Ex. 33, Record 140-2)
1877	1%	(R. 143, Or. 234) (R. 502)
1878	1%	(R. 144, Or. 235) (R. 502)
1879	1%	(R. 144, Or. 245) (R. 502)
1880	1%	(R. 580, Or. 985) (R. 144)
1881	2%	(R. 145, Or. 236) (R. 502)
1882	2%	(R. 145, Or. 236) (R. 502)
1883	1%	(R. 145, Or. 237)
1884	4%	(R. 146, Or. 237)
1885	0	(Ex. 33, R. 140-2, Or. 159)
1886	0	(Ex. 33, R. 140-2, Or. 159)
1887	0	(Ex. 33, R. 140-2, Or. 159)

1888 0 (Ex. 33, R. 140-2, Or. 159)
1889 0 (Ex. 33, R. 140-2, Or. 159)
1890 0 (Ex. 33, 140-2, Or. 159)
1891 1% (Record 502)
1892 1% (Record 502)
1893 2% (Record 146, Or. 238)
1894 2% (R. 582) (R. 146, Or. 238)
1895 2% (R. 582)
1896 2% (R. 582)
1897 3% (R. 582)
1898 8% (R. 146, Or. 239)
1899 8% (R. 146, Or. 239)
1900 8% (R. 146, Or. 239)
1901 8% (R. 146, Or. 239)
1902 8% (R. 146, Or. 239)
1903 8% (R. 146, Or. 239)
1904 8% (R. 146, Or. 239)
1905 8% (R. 146, Or. 239)
1906 8% (R. 146, Or. 239)

2.

QUALIFICATIONS OF WITNESSES FOR PLAINTIFF IN ERROR.

E. G. PRATT (R. 12. Or. 20), age 49 years, residence Chicago, gas engineer, competent to build and operate gas works and gas property. Had experience in 1876 in Newport and Watertown, Mass., doing general work about plant. Was there about two years. At Providence, R. I., 5 years, two of which as night foreman of gas works, and two as day foreman. Then at Newport. Had charge of distribution system. Then to North Attleboro as manager of company for four years. Then went to Des Moines, Iowa, as manager Capital City Gas Light and Electric Light Companies. Was with the Des Moines Company sixteen years as President and Manager. Then went to Milwaukee as Vice-president and General Manager of Milwaukee Gas Light Company. Was there three years. At Newport had 25 miles of mains, at Des Moines 60 miles. While in Des Moines and Milwaukee, studied and kept informed on cost of laying mains and cost of labor connected with installing gas plants. Works at Des Moines were practically re-built during his service there. (R. 13). During his career has made a special study of gas machinery with reference to cost of installation, operation, effectiveness and economy in use. Has kept posted in reference to the improvement of various kinds of gas machinery, and knows the prices and values of the same. Since leaving the Milwaukee Company has been engaged as expert gas engineer, and been studying, planning, and valuing gas works and property for other companies. From Milwaukee went to Detroit as Vice-president and General Manager Detroit City Gas Company.

From there went to Chicago, and opened an office as consulting engineer. Spent a great deal of time visiting other cities and in investigation of most improved methods of manufacturing gas. Made a care ful study of prices of machinery, mains, cost of laying mains, and of the cost of manufacturing and distributing gas. About twelve years ago valued the Ottumwa plant, recently valued Freeport, Kankakee, Ill.; Spokane, Wash.; works at Rockford, Ill., and in 1895 the Des Moines works. (R. 13-14). Made a complete schedule of the physical property of the Cedar Rapids Gas Light Company and placed valuation thereon. Also examined the plant in detail, and prepared sketches for the purpose of illustrating the operation of the works.

W. E. STEINWEDELL (R. 61).

Lives in Cleveland, Ohio. Age 34 years. Has been engaged in the gas machinery business five years as secretary of the Gas Machinery Company. Was engaged also in the manufacture of gas machinery and in the operation of gas works in Belleville, Ill., three years; Quincy, Ill., two years; and in Europe, three years. Is acquainted with and handles such machinery as is in operation in the Cedar Rapids gas plant, and is acquainted with the trade and selling prices of such machinery, and examined Cedar Rapids plant for the purpose of ascertaining the kinds and estimating and giving the prices upon new machinery of like character.

E. G. COWDERY (R. 66).

Lives in Chicago. Is Vice-president Peoples Gas Light Company of that city, and has been for about six months. Prior thereto was President and General Manager of Laclede Gas Light Company which manufactures four billion cubic feet of gas per year, and has over 800 miles of mains covering most of St. Louis. Was with that company four years. Prior thereto was vice-president and general manager of the gas company at Milwaukee ten years, and for nine years previous was superintendent. Has held position of President of American Gas Association, which is an association of gas engineers covering generally the United States. Is member of the Western Gas Association. Was with the Peoples Gas Light Company two years prior to going to Milwaukee, and with the Milwaukee Company in minor positions six years. Previous to that was with the Toledo Gas Company one year as engineer in laying out the plant. Knows the gas business since 1875 and has been at it continually since that time.

Had college training in the engineering line in the American Institute of Technology, Boston. Is a member of American Institute of

Gas Engineers. During the time he was in such business, he studied the question of the cost of manufacturing and distributing gas and the several questions that enter into what should be charged for the making of gas. Studied cost of making gas in small cities such as Cedar Rapids, Iowa. Has built and operated gas plants, and studied the subject over its different sides. Is prepared to give an opinion as to the reasonable rate for gas in Cedar Rapids, the proper cost of gas and the cost of delivering gas, and an estimate of the amount the company should earn over and above the actual cost of manufacturing and distributing based upon the estimated value of the plant.

J. C. MARKLEY (R. 84).

Has resided in Chicago four years. 36 years of age. Is manager and operator of a number of gas plants throughout the country in various cities (R. 92): Waukegan, Chicago Heights, Ill.; Hammond, Ind.; Wausau, Wis.; Little Rock, Ark.; Waterloo, and Ft. Madison, Ia.; Texarkana, Austin and Beaumont, Tex.; Jacksonville, Fla.; Mobile, Ala.; Benton Harbor, and St. Joseph, Mich. Has been connected with gas companies eleven years. Was employed at Milwoukee two years, then at Beloit between two and three years. Then returned to Milwaukee and was employed as statistician with the Milwaukee Gas Light Company. His business was to take the figures, costs, and results of various parts of the works, distributing systems, etc. Was employed by a bond house, and his work was visiting gas works and electric light plants, making examinations and reports on their condition. Such examinations included the physical properties and the books. Present work is confined to the engineering part of the business in the construction works and the operation of plants, comparing one plant with another and determining the proper results in different places, and fixing standards for them to work to. Visits each plant frequently. Has made a computation of and is able to give the cost of gas in Cedar Rapids based on the averages of the plants he has operated.

GEORGE F. KELLOGG (R. 99).

Has resided in Chicago 12 years. Occupation is public accountant, is assistant manager of the Audit Company of Illinois, a corporation of which C. W. Niesley is president. The company makes a business of examining into the books and accounts of business houses and corporations operating public utilities. Has been with the company five years. Prior to that time did same kind of work on his own account. The company does a great deal of that kind of business, and the witness had personally examined from 20 to 25 gas companies' accounts

in the last two years. Was employed to make an examination of the books and acounts of the Cedar Rapids Gas Light Company's affairs, and did it personally.

GLENN M. AVERILL (R. 119).

Lives in Cedar Rapids. 39 years old. Son of A. T. Averill, president of the Cedar Rapids Gas Light Company. Began work for the company in 1888. Was made secretary in 1890 and has been ever since. Had charge of the works in 1890-1. Was engaged in other business from 1892 to 1897 and in 1897 took general charge of the works, and has acted in that capacity ever since. Is familiar with the value of real estate in Cedar Rapids, and the cost of gas works and manufacturing and distributing gas. Knows also the history of the Company's development.

A. T. AVERILL (R. 176).

President of the Cedar Rapids Gas Light Company. Became interested therein in 1874. Purchased a one-half interest. Superintended the plant a good many years. Knows the cost of construction of the Cedar Rapids and other gas plants, the value of its real estate and other property. Knows also the history of the company's development.

GEORGE MC LEAN (R. 187).

44 years old. Resided at Dubuque all his life. Is president of the Key City Gas Company, and has been connected with it since 1883. Was made secretary and purchasing agent in 1889. In 1891 was made Superintendent and General Manager and also of the Consumers Steam Heating Company in the capacity of general manager and superintendent. Had charge of laying mains, and all works of every kind: construction, operation, distribution, and the commercial department. Had to deal with new works. As designer and stockholder has been connected with the plants of Waterloo and Cedar Falls. The plant at Waterloo, Iowa, was built in 1901-02. Made all the plans for these works. Selected the machinery laid out the distribution system. Made all specifications for laying out the pipe lines, superintended the construction of the works. Is acquainted with all the prices of machinery and materials that enter into the making of a gas plant, and keeps a price book of apparatus. Has kept posted on prices of gas machinery and pipe and the expenses of installing and operating plants. Has kept track of the cost of manufacturing gas in the City of Dubuque, Iowa, and prepared a schedule of the

cost of gas there, and a statement of what in his judgment would be the cost of gas in Cedar Rapids, Iowa.

R. A. WALLACE (R. 217).

Has been in the general contracting and building business in Cedar Rapids since 1871, including brick and wood and all kinds of buildings. Has made a study of the business of building brick and other buildings of all kinds. Has examined the buildings of the Cedar Rapids Gas Light Company. Did part of the work of constructing the same. Knows and has prepared a schedule of the present values of the buildings. Knows the locations of the plaintiff's plant and has recently examined it, also knows the value of real estate in Cedar Rapids.

J. C. LOOMIS (R. 222).

Member of the firm of Loomis Brothers, Cedar Rapids, Iowa, which has been engaged in contracting for seven years. Prior to that time for six or seven years was employed by A. H. Connor, general contractor of Cedar Rapids. Has become familiar with the cost of brick and frame buildings in Cedar Rapids, and is able to estimate the value of such buildings, and buildings now standing. Knows the location of plaintiff's plant and has recently examined it.

E. J. C. BEALER (R. 418).

Is in the general contracting business. Owner of a stone quarry. Been engaged in building stone walls of all kinds. Knows and testifies as to the value of retaining wall.

GEORGE B. DUTTON (R. 427).

Bookkeeper and cashier, Cedar Rapids Gas Light Company. Had long experience in connection with keeping books; is an expert accountant. Had charge of books for various large concerns, and had experience in auditing books.

GEORGE T. HEDGES (R. 258).

55 years old. Resident of Cedar Rapids. Has been in the real estate business in that city and vicinity for 25 years, devoting all his time to it. Knows real estate value generally in Cedar Rapids, and knows the location of the plaintiff's property, and is acquainted with its value.

H. S. KEFFER (R. 259).

City recorder of Cedar Rapids. Produces ordinance book and identifies certain ordinances.

3

QUALIFICATIONS OF WITNESSES FOR DEFENDANTS IN ERROR

J. P. MESSER (R. 259).

Has lived in Cedar Rapids 38 years. Been in real estate business there twenty-five years. Is familiar with the real estate values in Cedar Rapids. Knows the value of plaintiff's real estate. Says it is property which is hard for a real estate agent to value, because should be used only for certain purposes.

T. E. RAVENSCROFT (R. 260).

Resides in Cedar Rapids. Been in the real estate business about six years. Has become familiar with the values of real estate in and about the gas works. Knows the value of plaintiff's lots. One-half of his business is handling city property, the other half northern lands. Handles residence property in the city mostly. Never handled any in the vicinity of the gas works.

J. W. DARR (R. 261).

Resides in Cedar Rapids. General contractor. Been in the business twenty-six years. Building frame, brick, and some concrete buildings. Never constructed in Cedar Rapids buildings of any size to amount to anything compared to these of the gas works. (R. 266). Built about 100 buildings in the city being houses, barns, and frame and store buildings. Been engaged mostly in building residences. Built a one-story brick and stone building 80x100 feet wall 12 inches thick at Rock Rapids, Iowa, which is the only brick building he now recalls. Knows cost of building and testifies as to value of Gas Company's buildings.

H. C. RING (R. 269).

County clerk of Linn County, Iowa. Identifies certain records.

F. J. CLEVELAND (R. 269).

County auditor of Linn County, Iowa. Identifies assessment rolls.

C. H. CAMPBELL (R. 271).

Engineer for the Quaker Oats Company of Cedar Rapids, for sixteen years. Was formerly alderman in the city. Was such at the time of the passage of Ordinance 752 reducing the price of gas to ninety cents. Was chairman of the committee on light and water. Became a member in 1906. Made an investigation as to complaints

of consumers of the company. Made an investigation as to what people were getting for gas at Ottumwa, Joliet, Clinton, and Council Bluffs, and Des Moines. (R. 272). Is not competent to state what gas cost or how it should sell at any other place. Was not able to find a place in Iowa where gas was sold at less than $1.00 per thousand cubic feet.

C. J. FOX (R. 274).

69 years old. Lived in Cedar Rapids since 1875. Has been superintendent of the City Water Works since 1878. Acquainted with the value of Iowa public utilities, studied the subject of electroysis and the collection of accounts by public utlities.

E. R. MOORE (R. 278).

Has been engaged in the banking business 16 years from assistant bookkeeper to vice-president. Knows what it costs to keep a set of books in Cedar Rapids.

H. L. NEHLS (R. 279).

Engaged in real estate business in Cedar Rapids five years. Had experience in buying and selling to certain extent. Acquainted with the market value of real estate in certain parts of the city. Acquainted with the value of plaintiff's real estate.

A. F. GROELTZ (R. 280).

Has lived in Cedar Rapids 24 years. Been in the real estate business 15 years. Buys and sells and made a special study of real estate values in all its parts. Acquainted with the value of plaintiff's property.

T. R. WARRINER (R. 281).

City engineer of Cedar Rapids. Graduate of Harvard and Cornell and been engaged in surveying. Had experience in surveying for the River Front Improvement Commission of the meander line of the Cedar river.

GEORGE LAIRD (R. 283).

Superintendent of the Quaker Oats Company, Cedar Rapids. Tesifies as to gas bills of that company.

F. W. BARTA (R. 285).

Lived in Cedar Rapids 44 years. Testifies in regard to the original bank of the Cedar river at the gas works.

JOSEPH PROCHASKA (R. 286).

Testifies as to the river bank at the gas works.

JOHN LEASURE (R. 286)

Has been contractor and builder 16 years. Examined and measured plaintiff's buildings, and gave an estimate thereof. Has put up a number of brick additions for Standard Oil Company, Craemer's Dry Goods Store, and Presbyterian Chapel. Standard Oil building was 30x50 feet. Constructed no other buildings. Has done carpenter and other contract work in the way of additions. Has not constructed any brick buildings. Never constructed a cement building.

S. H. KOOSER (R. 293).

Lived in Cedar Rapids 40 years. Testifies as to the river at the gas works.

G. F. ALLISON (R. 294).

Identifies Exhibit 34, showing the streets and alleys of the city and the paving thereon.

W. E. HOLMES (R. 295).

City editor of the Gazette. Testifies as to troubles with the gas company. Complains because his gas was turned off. Then corrects his testimony to a statement that his water had been turned off.

N. R. PARVIN (R. 297).

Complains about the quality of gas.

E. M. SOBODA (R. 298).

Testifies as to the price of coke.

J. D. KENNEDY (R. 299).

Testifies as to the river at the gas works.

J. C. GILLESPIE (R. 299).

Testifies that he is an acountant, and learned his business with Stakes Brothers and Tim in Dublin, Ireland, and became associated with Marwick, Mitchell & Company in 1907, and had charge of the auditing of the books of the company for Marwick, Mitchell & Company.

JAMES HALL (R. 300).

Resides in Chicago. Is a chartered accountant and member of

the firm of Marwick, Mitchell & Company. Been in the business 14 or 15 years. Member of the Institute of Accountants and Actuaries. Commenced accounting work in 1893. Passed examinations as an accountant at Glasgow. Came to this country in 1905, and became identified with the firm. Examined the books of six gas companies. Examined the books of the Cedar Rapids Gas Light Company. Put in five days of 12 hours each, excluding the necessary work done in Chicago. Instructed Mr. Gillespie to take charge of the examination and make copies of the entries. Identifies Exhibit K-2 as the report of his firm of the examination of the books of the company.

THOMAS SUCHOMEL (R. 345).

Foreman of the Cedar Rapids Gas Light Company. Has been for 15 years, and has been employed by the company 23 years. Testifies as to certain operations of the plant, etc.

M. L. HEALEY (R. 349).

Testifies about trouble over a gas bill.

ALTON B. ADAMS (R. 350).

Resides at Worcester, Mass. Has been an independent consulting engineer since 1894. Graduate of the Warren Scientific School. Practiced engineering for some years in connection with electrical and power plants, but not gas works. Has made a careful study of iron pipe. Never designed, constructed or operated any gas plants. R. 356). Was employed in a gas regulation case at Ashtabula, Ohio in 1901, at South Boston in 1904, in another case at Watertown, N. Y., in another at Saratoga, N. Y., in another cast at Salem, Mass., also in other cases at Woonsocket and Fall River, Mass.

EDWARD W. BEMIS, (R. 363)

Supt. of Water Works, Cleveland, Ohio, since 1901. Graduate of Johns Hopkins University. Engaged in college work: Vanderbilt, Chicago University, and State College of Kansas, and in economic investigations until 1899. During that time studied municipal gas works in the United States. Visited many of these plants, and some private ones. Was a witness in two or three gas cases in Illinois, a case at Des Moines, Indianapolis, New York. Made special study of public service corporations. Was employed by Haverhill and Springfield, Mass. Investigated gas companies in Great Britain. Since 1901 has been employed by Boston in a gas case, and by New York City investigating the consolidated gas case. Also by Buffalo, N. Y., Chicago, Ill., Montreal, Can., Saginaw, Mich. In 1890 published a mono-

graph of 150 pages on municipal gas works in the United States. In 1900 edited a book, wrote one-third of it, entitled, "Municipal Monopolies." Made a study of the manufacture and distribution of gas. His study has given him knowledge of what depreciation is in works of this kind. Has examined Exhibit K-2 (R. 371). Had no experience in the matter of running a plant either water, gas or electric, the size of the one in the city of Cedar Rapids, and know nothing about it from personal experience. Only knows what he learned from the managers. Does not claim to be a gas expert, but an expert on gas statistical science (R. 373).

ALLAN MC DUFF (R. 386).

Member of the board of supervisors of Linn county, Iowa. Formerly general foreman of Rock Island machine shop, Cedar Rapids. Testifies as to life of boilers.

M. J. ELY (R. 387).

Produces a gas lamp with black substance on it. Testifies as to the pressure.

CLARENCE MC HUGH (R. 388).

Plumbing inspector. Testifies as to the tests of gas.

JAMES E. LAWLER (R. 399).

Testifies as to the life of boilers in Rock Island shops.

C. O. BATES (R. 400).

Chemist, Coe College, Cedar Rapids. Testifies as to certain deposits being Napthalene.

J. W. BOWMAN (R. 403).

Deputy clerk district court. Had experience in farming. Testifies as to his personal experience renting a farm in Linn County, Iowa, the return being less than three per cent, figured on a basis of of $110.00 an acre.

4.

VALUE OF INVESTMENT OF PLAINTIFF IN ERROR

a. *The Entire Plant.*

E. G. PRATT gives a complete general description of the works, and of the process of manufacturing and distributing gas. (R. 16 to 26 inclusive) and in Exhibit 46 (R. 27 to *29*, Or. 39 to 43) gives a

detailed description of the real estate and buildings, and in Schedule A (R. 29, Or. 43 to 50) gives a detailed statement and valuation of the entire plant, including its personal property, the said valuation being condensed, as follows (R. 34, Or. 50):

Valuation

(A)	Land upon which works are located	$ 15,000.00
(B)	Land upon which new holder is located	5,000.00
(C)	Land recently purchased	10,000.00
(D)	Thirteen frame houses	6,500.00
(1)	Shop building	1,500.00
(2)	Store Room Building	1,450.00
(3)	Coal store	3,576.00
(4)	Retort house (includes Nos. 7, 8, 9)	7,850.00
(5)	Coal gas app. room	3,745.00
(6)	Boiler house	900.00
(10)	Platform Wagon Scales	180.00
(11)	Purifying building	3,800.00
(12)	Pump pit	175.00
(13)	Wooden coke shed	535.00
(14)	No. 2 holder	1,500.00
(15)	No. 1 holder	5,000.00
(16)	Stable	1,750.00
	Retaining wall and fences	3,250.00
	Riprapping on river bank	750.00
(17)	Governor pit	250.00
(18)	No. 3 holder	42,500.00
(19)	Ammonia well	300.00
(20)	Tar well	175.00
(21)	Iron oil tank	730.00
(22)	Concentrated ammonia tank	730.00
(23)	and (24) Tar cisterns	400.00
	Total	$132,868.00
(1)	Contents of Shop (see schedule)	$ 1,320.00
(2)	Contents of Store Room (see schedule)	1,973.00
(3)	Contents of Coal Store (see schedule	4,670.00
(4)	Contents of Retort House (see schedule)	21,747.00
(5)	Contents of Coal Room (see schedule)	
(6)	Contents of Boiler House (see schedule)	2,470.00
(7)	Contents of Meter and Office Room	2,202.00
(8)	Contents of Scrubber and Condenser Room	9,870.00
(9)	Contents of Engine Room (see schedule)	3,125.00
(10)	Contents of Platform Wagon Scales (see schedule)	200.00
(11)	Contents of Purifying Building (see schedule)	5,615.00
(12)	Contents of Pump Pit Building (see schedule)	230.00
(13)	Contents of Coke Shed Building (see schedule)	110.00
(14)	Contents of No. 1 Holder, cubic feet	20.00
(16)	Contents of Stable (see schedule)	1,185.00
(17)	Contents of Governor Pit (see schedule)	625.00

(18) Contents of No. 3 Holder, cubic feet	400.00
(19) Contents of Ammonia Well	100.00
(20) Contents of Tar Well	300.00
(21) Contents of Oil Tank	458.00
(22) Contents of Concentrated Ammonia Tank	250.00
(23) and (24) Contents of Tar Cisterns	50.00
(25) Miscellaneous material	1,145.00
(26) Second hand	1,600.00
(27) Yard Connections	1,476.00
(28) Street Mains and Specials	119,856.00
(29) Service Connections	15,289.00
(30) Consumers' Meter	29,384.00
(31) Contents of Up Town Office	1,866.00
(32) Contents of Shop at Office	1,058.00
(33) Arc Lamps and Fixtures	3,575.00
Total	$232,169.00

Valuation

Land, Buildings and Structure	$133,046.00
Contents of Buildings and Structure	58,065.00
Second Hand Material	1,600.00
Yard Connections	1,476.00
Street Mains and Specials	121,373.41
Service and Meters	44,673.00
Contents of Office and Shop	2,924.00
Arc Lamps Loaned	3,575.00
	$366,551.41
Working Capital	25,000.00
Going Value, or Good Will	100,000.00
Total	$491,155.41
Deduct for error computing value coal shed	2,874.00
Deduct for error computing value coke shed	665.00
	$ 3,539.00
Add for error in computing cost of stable	500.00
Add for error in computing value retaining wall	2,150.00
	$ 2,650.00
Net deduction for errors	$ 889.00
The valuation of the physical properties exclusive of going value and working capital, making certain corrections for errors, being	$365,662.41
New Water gas set (R. 64, Or. 101) not included in above (contract made in 1906)	14,500.00
Extra high pressure pipe	5,867.15
Total physical value	$386,029.56

To which should be added:

Interest on capital during construction (R. 43	$ 22,415.00
Engineering (R. 43, Or. 64)	18,679.61
Organization (R. 51, Or. 67)	14,943.69
Working capital (R. 43, Or. 65)	25,000.00
Total of the investment of plaintiff in error exclusive of going value being	$467,067.86

The witness in his calculations took into consideration the present condition of the buildings and apparatus, and went over it with the same care that he would in buying the property. (R. 36 f. 52).

b. *Replacement value of the plant.*

Colonel Pratt gives the re-placement value of the plant (R. 45-6. Or. 68-9) as follows:

Land	$ 20,000.00
Coal shed	6,000.00
Retort house for 8 benches of 9s	18,500.00
Building for washers, condensers, scrubbers, tar extractors, etc	4,500.00
Building for engines, pumps, etc	3,000.00
Building for purifiers	8,500.00
Building for station meters and tanks	2,000.00
Building for boilers	2,000.00
Building for water gas set	7,000.00
Stables	3.500.00
Shop and stove room	4,500.00
1 one million gallon holder	75,000.00
1 relief holder for water gas	22,000.00
1 twenty thousand gallon oil tank	1,500.00
2 tar tanks	1,500.00
2 ammonia tanks	1,500.00
2 sets of scales	500.00
Eight benches of 9s	35,000.00
Washers and condensers, etc	12,000.00
4 purifiers, complete	17,000.00
1 governor	1,000.00
Ammonia apparatus	4,250.00
2 boilers	4,000.00
2 ten foot station meters	7,500.00
Valves and connection	1,500.00
Pumps for heating water, etc	600.00
Coal and coke conveyances	22,600.00
Contents of store room and shop	49,700.00
Mains and services	150,956.35
Valves and supplies	957.00
Meters and connections	50,000.00
For paving	7,289.00
Total cost of up-to-date works	$571,882.35

And adding items as follows:

Working capital	$25,000.00	
Interest on capital during construction	22,415.00	
Engineering	18,679.61	
Organization	14,943.69	
		$ 81,038.30
Making a total as the cost of a new plant		$652,920.65

c. *Real Estate — Plaintiff's Witnesses.*

EDWARD G. PRATT values the lots

in Fr. Block 9 at	$ 15,000.00
Those in Fr. Block 10 at	5,000.00
and those with frame houses in Block 9 at	16,500.00
(R. 34, Or. 50) Total	$ 36,500.00

The works are located on Fractional Block 9, Lots 1, 2, 3, 4, 5, all having a dimension of 300x140 feet. The new holder is located on Fractional Block 10, Lots 1 and 2, having a dimension of 120x140 feet. The "Annex" across the street acquired for extensions is in Block 9, Lots 1, 2, 3, 4, 5 and has a dimension of 140x300 feet. (R. 27).

A. T. AVERILL (R. 176 & 177).

President of the company testifies that he is acquainted with the value of the real estate, and that in his opinion:

5 lots in Fr. Block 9 are worth	$ 25,000.00
2 lots on Fr. Block 10	5,500.00
5 lots in the "Annex" or Block 9	20,000.00
	$ 50,500.00

GEORGE T. HEDGES, the experienced real estate dealer (R. 258) values

Lot 1 Fr. Block 9, Jan. 1, 1907	$ 4,500.00
And the other 4 lots at $3,500 each	14,000.00
2 lots in Fr. Block 10, at $3,000 each	6,000.00
4 of the lots known as the Annex, $3,500 each, and one lot, $4,500	18,500.00
Total, exclusive of buildings	$ 43,000.00

R. A. WALLACE (R. 219) values all the

5 lots in Fr. Block 9	$ 22,000.00
2 lots in Fr. Block 10	7,000.00
5 lots in the "Annex"	20,000.00
Making a total, exclusive of buildings	$ 49,000.00

c-1. *Real Estate — Defendants' Witnesses.*

(Excluding the 5 lots in the "Annex").

J. P. MESSER values (R. 259-260, Or. 430)
the 7 lots in Fr. Blocks 9 and 10 at $1,500 each, making a total of ..... $ 10,500.00

T. E. RAVENSCROFT (R. 260) values
5 lots in Fr. Block 9 at $1,800 each ..... $ 9,000.00
2 lots in Fr. Block 10 at $1,500 each 3,000.00

Total for 7 lots ..... $ 12,000.00

H. L. NEHLS (R. 279) said the highest estimate he would put on the lots in Fr. Block 9 and Fr. Block 10 would be $1,800 each, or a total for 7 lots of ..... $ 12,600.00

A. F. GROELTZ (R. 280) valued the same lots at $1,800 each, making a total of ..... $ 12,600.00
and testified that some lots were recently sold in the same vicinity at $2,500 a lot; that the lots are specially adapted for railroad tracks, freight houses, wholesale houses, and that it is a good location and well supplied with trackage, and he would not be surprised if the railway would pay $4.000 or $5,000 a lot for them.

c-2. *Five lots in Block 9, the "Annex" eliminated by defendants' witnesses and the Supreme Court*

It will be noted that the value of the five lots of the "Annex" was computed by Colonel Pratt at $16,500.00 and by the other witnesses for the plaintiff in excess of that amount, but the said lots were not valued by the witnesses for the defendant.

The contention being on the part of the defendant that as these lots were not at the time actually used for the production of gas that they should not be included in estimating the value of plaintiff's plant, and the Supreme Court of Iowa (R. 645) excluded this item. The testimony in relation thereto, is as follows:

MR. A. T. AVERILL, president of the company, says: (R. 177, Or. 293).

> "We purchased the Annex with a view of erecting a holder there and for any other machinery that we might put in. In my judgment the purchase of the Annex was a necessary investment for the company, looking to its future business. We considered erecting a water gas set on that this year just before the passage of the ordinance, when we made the contract for the new water gas apparatus, and that matter was considered after the passage

of the ordinance and we made no contracts for machinery, and no improvement that we could possibly help."

MR. PRATT says: (R. 26, Or. 37-38).

"Plaintiff has property across the railroad tracks from the works purchased in anticipation of future needs as the company has no land upon which to make extensions. The time is not far distant when Cedar Rapids will need another gas holder and they have no other property than that I have described. In building or extending gas works it is important to keep all your apparatus as near to the works as possible, and it is not practical to scatter the works over the town. I will say that this was a very wise purchase, not in the sense of a necessity because you can go anywhere and build, but it is certainly a wise precaution and I think it a wise expenditure of money."

MR. G. M. AVERILL says: (R. 120, Or. 200).

"It would be impossible to increase the plant in the present buildings. There is no more room in the yards for buildings, and we have no place to increase the condensing, scrubbing and purifying apparatus — those buildings being so crowded now that it was almost impossible to get the present apparatus in there, and the men can scarcely work on account of the excessive heat, and the buildings are inadequate for any increase of the machinery. When we have to increase again we will have to go to a new location entirely, to-wit: across the street. My judgment is that it was necessary to secure the lots in what is known as the Annex, in Block 9, in anticipation of the needs of the near future, and I base my judgment on my knowledge of the operation of the plant and the necessary room it takes and the increase we can reasonably expect in the business."

In discussing the elimination of the "Annex," the Supreme Court says: (R. 645).

"A witness for the plaintiff testified that with a little more machinery, the present plant could be made to manufacture more than three times as much gas as now sold."

The court entirely misapprehended the testimony.

MR. COWDERY (R. 77) says:

"The capacity of the coal gas apparatus is 400,000 c. f. and the water gas machine 750,000 c. f., or a total of 1,150,000 c. f. a day. I think it would need enlarging, adding purifying apparatus and additional holders and other machinery."

The testimony of Mr. A. T. Averill (R. 177), G. M. Averill (R. 120), Colonel Pratt (R. 26), shows that the "Annex" was acquired for the purpose of building the additional holder, and that there is no room on the lots where the works are located for that purpose. Thus, it

clearly appears that in order to make use of the full capacity of the gas apparatus mentioned by Mr. Cowdery, it will be necessary to have new purifiers and additional holders and other machinery, and to place these requires the use of the "Annex."

Besides, the Supreme Court of Iowa loses sight of the fact, as shown by the evidence, that the company must have a reserve capacity all the time, because by its franchise it is obliged to furnish gas of good quality at all times to meet the demands of consumers. A break-down of the water gas apparatus above mentioned would reduce the capacity by about two-thirds.

The testimony shows that the benches in the coal gas apparatus need to be renewed and the water gas apparatus relined frequently, and it takes considerable time to do this. Therefore, the company must have and does have, as shown by the testimony, reserve apparatus of sufficient capacity to more than double the highest demand.

The testimony of Mr. Groeltz (R. 280) and other witnesses in reference to the value of the real estate, shows that the railroads have been buying up the property in that vicinity, and that there is no other vacant property there. It was absolutely necessary for the company to have additional property adjacent to its works in order to enlarge the same, and it seems clearly a part of wisdom for the company to have purchased these lots, and they should be included in its investment.

d. *Present value of the plant compared with new plant.*

MR. W. E. STEINWEDELL made an examination of the machinery in the plant, and placed a valuation upon new machinery such as the plaintiff in error uses, and a comparison of the valuation placed thereon by Mr. Pratt with the cost of new machinery so far as the items correspond, is as follows:

Items	*Pratt* Present Value Schedule A. (R. 29 to 32)	*Steinwedell* Value New
Two 16x72 boilers	$ 2,100.00 (R. 30)	$ 3,956.00 (R. 62)
One 6 ft. water gas set	4,500.00 (R. 30)	8,137.00 (R. 62)
One lathe	200.00 (R. 29)	325.00 (R. 62)
One meter prover	100.00 (R. 29)	250.00 (R. 62)
(Three benches 9's and	9,800.00) (R. 30)	
(Two extra fillings	1,620.00) (R. 29)	13,950.00 (R. 62)
Three benches 6's	6,750.00 (R. 30)	7,400.00 (R. 62)
One 6 ft. meter Water Gas	600.00 (R. 31)	1,480.00 (R. 62)
Oil storage tank	730.00 (R. 35)	650.00 (R. 62)
One ammonia concentr.	3,000.00 (R. 30)	3,150.00 (R. 62)
Ammonia tank	730.00 (R. 35)	750.00 (R. 62)
Wagon scales	180.00 (R. 35)	200.00 (R. 62)
No. 3 holder	42,500.00 (R. 40)	44,000.00 (R. 62)

No. 2 holder.....	5,000.00	(R. 40)	7,150.00	(R. 62)
No. 1 holder.....	15,000.00	(R. 40)	16,500.00	(R. 62)
Four purifiers.....	5,000.00	(R. 31)	16,296.00	(R. 62)
(Two exhausters and....	750.00)	(R. 31)		
(Two engines.....	350.00)	(R. 31)	1,400.00	(R. 62)
Two compressors.....	1,250.00	(R. 31)	1,300.00	(R. 62)
(Final condenser, with...		)	1,500.00	(R. 62)
(16 inch by-pass, etc.....	1,800.00)	(R. 30)	520.00	(R. 62)
(One washer and.....			800.00	(R. 62)
(By-pass	480.00	(R. 30)	310.00	(R. 62)
(One scrubber equipped..	1,800.00)	(R. 30)		
(One scrubber equipped..	1,800.00)	(R. 30)	1,715.00	(R. 62)
(Two by-passes.....		) (R. 30)	1,200.00	(R. 62)
One tar separator.....	150.00	(R. 30)	820.00	(R. 62)
(27,450 ft. 2 in. W. I. pipe	3,902.00)	(R. 33)		
(34,275 ft. 2 in. W. I. pipe	4,884.00)	(R. 33)	10,863.00	(R. 63)
(39,450 ft. 3 in. W. I. pipe	9,953.00)	(R. 33)		
(19,550 ft. 3 in. W. I. pipe	4,932.00)	(R. 33)		
(8,400 ft. 3 in. W. I. pipe	1,932.00)	(R. 33)	20,220.00	(R. 63)
(17,200 ft. 4 in. W. I. pipe	6,267.00)	(R. 33)	9,481.00	(R. 63)
(6,900 ft. 4 in. W. I. pipe	2,510.00)	(R. 33)		
1,600 ft. 6 in. W. I. pipe	768.00	(R. 33)	1,040.00	(R. 63)
(5,400 ft. 4 in. C. I. pipe	2,592.00)	(R. 33)	9,429.00	(R. 63)
(13,650 ft. 4 in. C. I. pipe	6,552.00)	(R. 33)		
(21,300 ft. 6 in. C. I. pipe	14,271.00)	(R. 33)	20,994.00	(R. 63)
(8,650 ft. 6 in. C. I. pipe	5,795.00)	(R. 33)		
6,550 ft. 10 in. C. I. pipe	7,434.00	(R. 33)	9,094.00	(R. 63)
3,950 ft. 12 in. C. I. pipe	5,727.00	(R. 33)	6,952.00	(R. 63)
550 ft. 16 in. C. I. pipe	1,199.00	(R. 33)	1,523.00	(R. 63)
23,760 ft. 3 in. C. I. pipe	5,483.00	(R. 33)	11,167.00	(R. 63)
13,247 pounds specials..	397.00	(R. 33)	662.00	(R. 63)
One 12-inch valve.....	30.00	(R. 33)	33.00	(R. 63)
One 10-inch valve.....	24.00	(R. 33)	27.00	(R. 63)
Nine 6-inch valves.....	108.00	(R. 33)	153.00	(R. 63)
Six 4-inch valves.....	60.00	(R. 33)	78.00	(R. 63)
Fifteen 3-inch valves....	100.00	(R. 33)	150.00	(R. 63)
1,830 3-light meters.....	11,895.00	(R. 34)	12,352.00	(R. 64)
1,173 5-light meters.....	9,184.00	(R. 34)	9,677.00	(R. 64)
742 10-light meters.....	7,049.00	(R. 34)	7,494.00	(R. 64)
20 16-light meters.....	204.00	(R. 34)	582.00	(R. 64)
2 16-light meters.....	108.00	(R. 34)	111.00	(R. 64)

e. *Building Values — Witnesses for Plaintiff in Error.*

R. A. WALLACE, builder and contractor, examined the buildings of the plaintiff in error, and fixed their value at the time of the trial at $31,150.07. (R. 217-219).

J. C. LOOMIS, contractor (R. 223), placed the total value of these buildings at $32,304.00.

These comparisons show that the figures of Mr. Pratt are fully corroborated by the other witnesses.

The total valuations of these three witnesses on the buildings, including retaining walls and fences, are as follows:

Pratt (R. 34), $31,711.00; Wallace (R. 217-19), $31,150.07; Loomis (R. 223), $32,904.00.

e-2. *Building Values — Witnesses for Defendants in Error.*

The defendants in error produced no witnesses who attempted to place a value upon the entire plant, but only upon certain portions thereof, to-wit:

1st. Real estate, as hereinbefore set forth.

2nd. Building values.

J. W. DARR, who really had no experience as a contractor and builder, valued portions of the buildings of the plaintiff in error, as follows: (R. 265).

1.	Shop building and store room	$ 2,324.46
2.	Purifying building	4,781.60
3.	Coal shed	1,328.64
4.	Retort and water gas house	6,685.11
5.	Pump pit	107.40
6.	Tool house	54.00
7.	Coke shed	373.50
8.	Boiler house	395.00
9.	Office building, etc	3,205.00
10.	Barn	1,404.50
11.	Roof over driveway	62.50
12.	Paving	67.00
13.	Roof over scales	90.00
	Total	$ 20,878.71

JOHN LEASURE (R. 288-291), who also has had no considerable experience in building, valued the same buildings at.....$ 22,132.57

e-3. *Omissions by defendants' witnesses.*

It will be noted that these witnesses left out of consideration the following items, included by Colonel Pratt and the other witnesses for plaintiff in error:

Retaining walls and fences	$ 4,000.00
Governor pit	250.00
Ammonia well	300.00
Tar well	175.00
Iron tank	730.00
Concentrated Ammonia tank	730.00
Tar cisterns	400.00
Total	$ 6,585.00

which leaves the total of the estimates of all the witnesses substantially the same as to the value of the buildings.

f. *Street Mains and Specials.*

In Colonel Pratt's schedule (R. 35), street mains and specials are included at.....$121,372.41
In Schedule B. (R. 33, Or. 48), was included 23,760 feet of high pressure main at..... 5,483.00
being the main from the works to the city limits. This main was afterwards found to be a 4-inch main, and therefore Colonel Pratt corrected his figures by computing the cost of the 23,760 feet at..... 11,350.15
making the total value of the mains and specials at.....$126,349.15
(R. 42, Or. 63; R. 43, Or. 64).

To reproduce the distribution system at the present time in its present condition, Colonel Pratt figures the price of pipe at $32.50 per ton, and the price at the time of the trial was $37.00 a ton, showing that Mr. Pratt allowed a liberal discount for depreciation. It is true that Mr. Bemis undertakes to show an over-valuation by Colonel Pratt on the pipe of about $4,000 (R. 383), but the estimates of Mr. Bemis are based on a schedule given by Mr. Fox of the cost of water pipe from the years 1896 to 1900, while if he had taken from the same schedule the average prices from the year 1903 to the year 1907, the average price would have $32.29 per ton. See Defendant's Exhibit E-3 (R. 401), and add for cartage 50 cents per ton, and $1.00 per ton for gas pipe.

g. *Total amount of actual investment of plaintiff in error exclusive of going value.*

The defendants in error offered no evidence disputing the other items of valuations contained in Colonel Pratt's schedules, and it is submitted that the fair value of the physical plant of the plaintiff in error at the time of the trial in the District Court of Linn County, Iowa, was practically conclusively established to be.....$386,029.56
to which should be added the items: Interest on Capital during Construction, Engineering, Organization, and Working Capital as above..... 81,038.56

Total investment.....$467,067.86

h. *Working Capital.*

The testimony in reference to working capital is as follows:
In valuing the plant, Colonel Pratt included among the physical property the following items:

400,000 c. f. purified gas (R. 31, Or. 46)	$ 400.00
10,000 gal. Ammonia liquor	1,000.00
14,000 gal. tar	350.00
10,000 gal. oil	458.00
4,000 lbs. Concentrated Ammonia	250.00
1,000 tons coal (R. 29, Or. 44)	4,520.00
4,100 bushels Oxide (R. 31)	615.00
20 tons coke	110.00
Miscellaneous material (R. 32)	1,145.00
Second hand material	1,600.00
Total	$ 10,448.00

COLONEL PRATT says (R. 59):

> "At the time I examined these works I would say that $25,000.00 working capital, in addition to 1,000 tons of coal, 10,000 gallons of oil, the oxides and other fittings and materials on hand, plus the Wellsbach and incandescent lamp supplies, was a reasonable working capital."

The amount due from consumers would be about $8,000 a month, and this should be included as part of the working capital. It would also be necessary to take care of the labor pay rolls amounting to about $4,000 a month (R. 60). In estimating the necessary working capital, I took the conditions existing at Cedar Rapids (R. 61). It is advisable to have on hand about 6 months of coal, which would amount to $19,153.00 (R. 60).

Mr. Hall, accountant for defendants in error, shows a balance sheet (R. 611) of material and cash on hand for the years 1902 to 1906 inclusive, which amounts to an average of about $15,000.00 (R. 611). In their testimony, Mr. Hall and Mr. Bemis (R. 607 and R. 371), assume that $2,500.00 is sufficient for working capital, in addition to the materials on hand, but in the final schedule wherein Mr. Hall computes the value of the plaintiff's property (R. 607), he allows only $9,828 as the material on hand, and adds thereto only $2,500 as a working capital. This amount of material on hand happened to be an inventory thereof at the close of business on the 9th day of August, 1907 (Schedule A, R. 551 to 563) so that the total working capital allowed by Mr. Hall's estimates is about $12,328.00 (R. 607) while the record of the company shows that it has employed constantly about $30,000.00 as a working capital including materials on hand, and amount owing from its consumers.

i. *Going Value.*

To the physical values of the plant as hereinbefore set forth, should be added something for the going value, which Mr. Pratt estimates at $100,000 (R. 45, Or. 67) and Mr. Cowdery at $150,000. (R. 84)

Mr. Pratt says: "The going value is what the business is worth to the individual or corporation, which business they have themselves developed.

This company has been in business many years, and there has been a certain amount of development and education, to induce people to use gas. The company has spent thousands of dollars in development. I would say the good will of the company in a town of the size of Cedar Rapids with its present business and what it has accomplished by way of developing, would be worth at least $100,000 00 (R. 45, Or. 67).

In this connection, we call the attention of the court to the table of dividends given on page 24 of this Brief, showing that for the first six years of the existence of the company it paid no dividends whatever, for the next four years only 1%, for the next two years 2% and the next year 4%, and the next six years no dividends, the next two years 1%, the next three years 2%, and the next year, 1897, 3%, all of which clearly shows that it took this company more than 25 years from the date of its organization before it was able to pay dividends to amount to anything on its capitalization. These were 25 years of establishing going value and of building up the business. It is true that during this time, a very large part of the earnings of the company were used for the purpose of developing the business. Mr. A. T. Averill, president and builder of the company, says (R. 176):

> "When we first purchased the plant (1874), I did not have much to do with it. The Higley Brothers were running it, and it ran behind. Then we got a man from Kansas here, and who thought he could run it at a profit, and made a failure. I bought Mr. Higley's interest, and let the superintendent go, and went down to the plant myself with the determination either to make it pay or blow it into the river. I superintended it a great many years myself. I got a very small salary, practically giving the time that I put in, to the company."

It would seem that in all fairness, the court should now allow a substantial addition to the physical values of the plant by way of going value.

The Supreme Court of Iowa allowed nothing for going value, and allowed nothing for:

Interest on capital during construction (R. 43)	$ 22,415.00
Engineering and superintendence (R. 43)	18,679.61
Organization, securing franchise, legal expenses, etc. (R. 51)	14,943.69
Making a total	$ 56,038.30

If the item of $100,000 as going value is eliminated, it would cer-

tainly appear to be absolutely fair that the above items amounting to $56,038.30 should be included, because these items were at least a part of the necessary and proper expense in the establishment of the plant as a going concern.

j. *Paving over Mains.*

When the gas company was organized and commenced business, Cedar Rapids was a town of about 7,000 or 8,000 population, and as shown by the census returns, and extensions of the mains of the gas company, the city has been constantly growing. It now has a population of about 35,000.

It is shown in the record in this case, that the streets of Cedar Rapids are very extensively paved, and when the paving has been done, it has been necessary for the gas company to lay its mains long in advance of any demand for the use of gas along such mains, and the city enacted an ordinance that the mains should be laid and gas connections made before the paving was laid (Ex. F-2, R. 585) and the Gas Company and citizens were prohibited by said ordinance from making any excavations or paving for four years after the paving is laid, except by special resolution of the City Council.

Another matter should be taken into consideration in this connection, and that is that as the city grew, it was necessary to extend the mains. Those in the business part of the city and nearest to the works became too small, and then it was necessary to take up the paving and lay new mains. So that as a matter of fact, the items of Paving over Mains enter into the actual cost of the mains as now existing, and besides the present value of the distributing system, is what the mains are reasonably worth connected up with the plant, and this would include the cost of laying the mains at the present time, which must of necessity include the cost of taking up and relaying paving. On this subject, the witnesses testify, as follows:

In estimating the value of the mains Colonel Pratt included items for paving over mains and services amounting to approximately $43,000 (R. 253, Or. 418). Colonel Pratt says: "I have added for paving over mains, because if one were to lay mains in the principal streets of Cedar Rapids today, he would have to remove and restore the pavement in order to do so and this removing and relaying the paving is recognized as a proper element in the valuation of plants of this character by all investment companies, and by all waterworks and gas companies, and all engineers in the construction of public service plants." (R. 42, Or. 63).

There is no contention on the part of the defendants in error that the amount included for paving is too large, but they contend that

this item should not be included at all in the valuation of the plant. Mr. Bemis testified (R. 377, Or. 626):

> "I did not take into consideration that the paving would have to be taken up and relaid, but assuming that the pipes were reproduced in their present condition and location, then you would have to take into consideration the repaving. Assuming that in order to get at the present value, it would be necessary to relay the mains in their present location and take up the paving and relay it, then the paving should be taken into consideration."

This witness says (R. 378):

> "In fixing the price of gas the paving over mains should be ignored. Possibly for the purpose of sale it should be figured in. These are two different legal principles. In determining the duplication value it would be necessary to take the removing and relaying of the paving into consideration, that is as far as I can go. In making up my estimate I did not take that into consideration. I ignored all paving."

Mr. Bemis gives as a reason for excluding this item of paving over mains, that the mains could be laid in the alleys and in the parkings along the streets, but it is shown by the testimony that this is wholly impracticable in the way of lessening cost:

1st. Because the mains would necessarily cross the streets at many places.

2nd. Because alleys are paved, and it is not as practical to reach the residences from the alleys as from the streets.

3rd. Parkings are planted to shade trees and are ornamental.

Section 1 of the franchise (R. 8, Or. 14) provides that the company "may occupy the streets, avenues, and alleys for laying down mains," and "said gas pipes when so laid shall not in any manner interfere with the drainage of the city or the necessary construction of sewers or underground ways for conveyance of water or with any other improvement that the city may make upon or in said streets and alleys."

The parkings are certainly improvements upon the streets. No authority is given to lay mains in parkings, nor could it be given for the residents would not tolerate such an act on the part of the city.

5.

Cost of Manufacturing and Distributing Gas

The cost of manufacturing gas and of placing it at the disposal of the consumer was shown to include generally, the cost of all labor and materials used in manufacturing and distributing gas, the salaries of officers and clerks, the necessary general repairs of the plant, and a renewal fund called by the witnesses "depreciation."

This was shown by plaintiff in error from the actual experience of the company, by testimony of its officers, by its books of account, by a thorough audit of its books by Mr. Kellogg, an experienced accountant showing their accuracy, and by opinions of experienced and practical gas engineers, based upon their general knowledge of the gas business and actual conditions in Cedar Rapids, *and with reference to normal conditions of operation and consumption.*

a. *Character of Testimony for Plaintiff in Error.*

The testimony for plaintiff in error was from men who have spent their lives in the operation of gas plants. Glenn M. Averill has been with the plaintiff in error since 1888, as superintendent and general manager since 1890. Mr. Cowdery was vice-president and general manager in Milwaukee ten years, and for nine years previous to that was superintendent. He says: "My present business is vice-president of the Peoples' Gas Company of Chicago. Prior to going to Chicago, I was vice-president and general manager of the LaClede Gas Light Company of St. Louis four years."

Mr. Markley has been connected with gas companies eleven years. He says: "My business is managing operator of a number of gas plants; my present work and duty is practically confined to the engineering part of the business in the construction work and the operation of the plants, comparing one plant with another and determining the proper results in the different places, and fixing a standard for them to work to."

Mr. McLean is also a man with large experience in the management and operation of gas works. He is now president of the Dubuque Company, was secretary and purchasing agent in 1889 and was made superintendent and general manager in 1891. He says:

> "In the capacity of general manager and superintendent I had charge of the laying of mains and of all work of every kind, construction, operation and distribution, and the commercial department. As president I have had to deal with new works, have had charge of the business of every kind, in fact, I have been for years, the only active officer of the company."

Mr. Pratt began the gas business in 1876, was president and manager in Des Moines for 16 years, resigning to go to Milwaukee in 1902.

b. *Character of Testimony for Defendants in Error.*

The testimony given by Mr. Bemis (R. 364, Or. 602) and by Mr. Adams (R. 351) for defendants in error was objected to because the witnesses were incompetent and were not practical gas men or engineers, but their knowledge is wholly theoretical, and that the wit-

nesses are not competent to testify as to the cost of gas, and all the evidence of these witnesses was taken subject to those objections.

The testimony of James Hall, the acountant, for defendants in error, in so far as it related to the allowance for depreciation and the elimination of certain items in the cost of gas was objected to for the same reason (R. 364), and his report upon the books, Exhibit K-2, was objected to because the exhibit is based upon conclusions and opinions in reference to matters of gas engineering and practical gas operations which the witness is shown to be incompetent to give.

Appellant also objected to each schedule in Exhibit K-2, and moved to strike them out (R. 365 and R. 440).

It was admitted that Mr. Bemis had had no practical experience in the gas business. He is a theoretical statistical expert without knowledge of the gas business, except as he has read and examined reports of gas commissions.

That his knowledge is based upon Massachusetts reports is admitted. He says:

> "In my estimate I include whatever they pay for insurance; it may be liability insurance or it may be common fire. I don't know whether I include anything for employers' liability or not. I took the experience and average of those Massachusetts reports."
>
> "Q. What do the Massachusetts companies include in insurance?"
>
> "A. What they think proper, is all I say. I don't know what they think proper to include, but I know what they call it."
>
> "Q. You don't know what you include in insurance?"
>
> "A. No, I simply call it insurance. I can't tell by the reports from the Massachusetts companies what they include and I didn't pretend to find out."

He would cut down the president's salary to $150.00 a month and the rest of the office force enough to make about 2 cents a thousand. He doesn't know where, but says: "Mr. Hall said he would take a contract to do this office work for $200.00 a month aside from the manager," and is his reason for taking 2c per M. c. f. off the cost of distributing gas (R. 373, Or. 619-620).

At another time this witness testified (R. 374, Or. 620):

> "I examined the holder and found at least a score of white markings, which your works manager agreed with me were evidence of leakage. There were any quantity of white markings there and I didn't care to touch a match to them. I know the holder is in bad shape."

The works manager, *Thomas Suchomal,* was later called by defendants, and the following explanation of the "white spots" occurred:

"Q. Are there any leaks in that holder?"
"A. No sir; not to my knowledge."
"Q. What are the white spots on the holder?"
"A. It is sparrow feathers and bird droppings — most of it. I didn't notice them white spots until Mr. Adams spoke about it and then I examined to see what they were. Some is bird droppings and some is feathers that sticks to the paint on the holder; the holder goes down in the water and the birds sit on there and drink, and the feathers stick to the holder when it comes up. There are no gas leaks in the holder." (R. 388, Or. 645).

A station meter is a circular drum, partially filled with water. The water line is raised to a height where the drum will correctly measure the gas passing through it. So that it is an impossibility for the meter to change except as water is poured into the drum or drawn from it, (R. 149, Or. 244) yet this witness Bemis says (R. 375, Or. 622-23):

"The way meters usually do is to gradually get to running faster; it is either fast or slow; it is a gradual process."
"Q. How do they regulate the station meter as to running slow or fast?"
"A. I never attempted that. I don't know as a matter of fact, whether it is possible for a station meter to gradually get faster or slower, but I think it is probable."

Mr. Adams testified for defendants in error, and the following is a paragraph which shows his incompetency: "In making my estimate of the pipe to be taken up, I took into consideration the usual per cent of 2 inch pipe in the system. What the usual per cent is I can't say." (R. 361, Or. 597).

Again he says: "I cannot tell what percentage of 6-inch pipe I estimated without referring to the reports. My opinion of percentages is based entirely on these reports I have read. The New York and Massachusetts Commission reports."

Q. Can't a laborer on the streets or in the gas works make the tests (for pure gas) and find out in a minute?
A. I don't know without looking at my books.
This witness produced Exhibit X-2, and on examination said:

"Exhibit X-2 is a blue print, it is a copy of page 544 of the Engineering News. I did not make the tracing. I have no knowledge as to whether it is correct, because I have not compared it. The Exhibit says: 'Compiled by John Alvoid.' I don't know anything about the man or whether he is an engineer." (R. 395, Or. 658).

The plaintiff in error contended that neither Bemis (R. 439, Or. 735), nor Adams (R. 439-40, Or. 735) was qualified to testify as to the cost of gas, or the depreciation of the company's property.

Mr. Hall, the accountant for the city, testified that he had never

worked in or about a gas plant and had had no practical experience in the gas business, his only experience was that of an accountant, and he had no knowledge of the depreciation of gas machinery and plants.

c. *Actual Cost of Gas.*

G. M. AVERILL, Secretary and Treasurer of the plaintiff in error prepared a condensed statement showing the actual operations of the plant for the years 1905-1906. This statement is Exhibit 32, and is made up from the books of the company, and is as follows (R. 151):

Exhibit No. 32.

Operating Statement 1905.

Received for gas	$ 86,701.04	
Received for coke	16,577.93	
Received for tar	1,285.57	
Total receipts		$104,564.54
Expense Mfg.	55,289.07	
Distribution	6,758.98	
Interest and taxes	6,213.54	
Office expenses	6,785.37	
Depreciation	10,000.00	
Total cost		85,046.96
Surplus		$ 19,517.58
Received for rent		$ 292.91

Operating Statement 1906.

Received for gas	$ 95,290.94	
Received for coke	16,399.23	
Received for tar	988.35	
Total receipts		$112,678.52
Expense Mfg.	61,009.31	
Distribution	5,943.83	
Interest and taxes	6,849.03	
Office expense	7,795.70	
Depreciation	13,000.00	
Total cost		94,397.87
Surplus		$ 18,080.65
Received from rents		$ 529.99

The price charged for gas for the month of January, 1905, was $1.35 per M. c. f. with ten cents per M. c. f. discount if paid on or before

the 10th of the succeeding month, and the price after February 1st, 1905, was $1.25 per M. c. f. with ten cents discount per M. c. f. if paid on or before the 10th of the succeeding month to all consumers using less than 20,000 cubic feet per month.

For those using from 20,000 to 40,000 cubic feet per month the net rate was.....$1.10

For those using from 40,000 to 50,000 cubic feet per month the net rate was..... 1.05

For those using from 50,000 or more cubic feet per month the net rate was (R. 150)..... 1.00

Some of the large consumers get the benefit of these lower prices (See R. 561).

c-1. *Reduction to ninety cents would wipe out all profits to the company.*

The amount of gas sold in 1905 was (R. 153, R. 648) 76, 782, 600, and in 1906 (R. 153; R. 428) the amount sold was 91,173,200, so that a reduction in the price from $1.15 net to 90c flat, or twenty-five cents per thousand cubic feet proposed by the ordinance would have reduced the income of the company in 1905, $19,195.65, and in 1906, $22,793.30, which would have more than wiped out the net earnings of the company, as shown by G. M. Averill above.

During these years the company paid only $12,000 each year out of earnings as dividends, which was three per cent on the value of the plant.

Even Mr. Hall, the accountant for defendants in error found (R. 589) the actual profits of the company as shown by the books before deducting any depreciation for

	1905	1906
	$ 35,437.49	$ 31,610.64
Deduct the reduction made by the 90c ordinance of 25c per M. c. f. shown above.....	19,195.65	22,793.30
And there would have remained as profit without depreciation.....$	16,241.84	$ 8,817.34
If you deduct 5c per M. c. f. which Mr. Hall allows for depreciation, which equals.....	3,839.13	4,558.66
It would leave as the net profit.....$	12,402.71	$ 4,258.68
While if you deduct 10c per M. c. f. or about 2% on the value of the plant, which is a fair amount to allow making an additional deduction of 5c.....	3,838.13	4,558.68
It would leave the net profit.....$	8,563.58	
Loss		$ 299.98

GEORGE B. DUTTON, bookkeeper and accountant, compiled a condensed statement from the books of the company (R. 428, Exhibit 57), showing the *cost to the company of gas metered* for five years: 1902 to 1906 inclusive, including interest items paid by the company to be *83.96* cents per thousand cubic feet, and excluding interest items paid by the company to be *81.64* cents per thousand cubic feet.

George F. Kellogg, Expert Accountant, made an examination of the company for the years 1905 and 1906, and found the books and accounts mathematically correct (R. 99, f. 163).

Mr. Kellogg found (Exhibit D of Ex. 25) the cost per thousand cubic feet of gas manufactured and distributed for the year *1905 to be 75.6 cents* (R. 105) per thousand cubic feet, and for the year 1906 (Exhibit E of Ex. 25) 79.9 cents (R. 106).

d. *Estimated Cost Based on Cedar Rapids Conditions.*

The plaintiff in error called four expert witnesses who gave their opinions as to the proper charge for gas in Cedar Rapids, based upon their knowledge of conditions existing and their knowledge of and experience in the operation of gas works under normal conditions.

E. G. COWDERY says:

> "I have made a computation and estimate based upon my knowledge and experience in the gas business as to what rate should be charged in Cedar Rapids, also the amount the company should earn as interest or return on its investment. In my estimate I have taken the price of materials and the general prices paid for labor in Cedar Rapids." (R. 67).

The following (Exhibit 8; R. 67, Or. 107) is the estimate:

Exhibit 8.

Coal Gas.

One ton produces 9,600 c. f. gas, 1,200 pounds good coke, 12 gallons tar, 4 pounds ammonia gas.		
One ton coal costs at $4.52 per ton	$ 4.52	
Benchfuel to gasify — 400 lbs. coke at $5.50 per ton	1.10	
		$ 5.62
Steam	.02	
Cost of coal per M. cu. ft. of gas	.5854	
Retort house labor	.0750	
Purifying	.01	
Repair works	.04	
Miscellaneous expense	.02	
Superintendence	.0150	
		.7654

Credit Residuals.

1,200 lbs. coke at $5.50 per ton	$ 3.30	
12 gallons tar at 1½c per gallon	.18	
4 lbs. amonia at 5c	.20	
Per ton of coal	3.68	.3833
Net cost per 1,000 ft. made		.3821
Net cost per 1,000 ft. sold		.4153

Water Gas

40 lbs. boiler fuel at $3.75 per ton	.0750
45 lbs. generator fuel — coke, at $5.50 per ton	.1238
4½ gallons oil at .40⅛c	.1825
Labor — gas making	.05
Purifying	.01
Miscellaneous expense	.01
Repairs works	.02
Superintendence	.0150
Total cost per 1,000 ft. made	.4863
Total cost per 1,000 ft. sold	.5286
Average cost one-half coal and one-half water gas	.4720
Cost of gas manufacture	.47720
Distribution expense	.07
Collection and office expense	.09
Promoting	.03
Taxes	.05
Injuries and damages	.01
Fire insurance	.01
Depreciation and reserve	.10
Cost of gas per M. c. f.	.8320

The witness also explains in detail (R. 68 to 71) how he arrived at the various items of the estimate.

J. C. MARKLEY, who has charge of the operation of 13 companies in small cities, made a computation as to the cost of manufacturing and distributing gas in Cedar Rapids based upon the experience of said companies, and upon prices of material and labor in Cedar Rapids, Iowa, and the same is set forth in Exhibit 9 (R. 85, Or. 138), which is as follows):

EXHIBIT NO. 9

PORTION OF COAL GAS COST

One ton Youghiogheny at 4.75 cu. ft. of gas per lb.:

9,500 cubic feet of gas
1,200 lbs. of coke
4 lbs. of ammonia
12 gallons of tar

Cost of coal.....$4.52 per ton

COST PER M. CU. FT. OF GAS MADE

Gas coal		.475
425 lbs. of bench fuel, at $5.50		.1168
Total materials		.5918
Less residuals:		
1,200 lbs. of coke at $5.50 per ton	.3473	
12 gallons of tar at .01¾	.0221	
4 gallons of ammonia at .05	.021	.3904
Net cost materials		.2014
Retort labor		.1061
Bench repairs		.02
Cost in retort house		.3275

PORTION OF WATER GAS COST

Water gas steam	.0279
Generator fuel, 40 lbs. at $5.50	.11
Oil, 4.3 gallons at .0408 per gallon	.1754
Total materials	.3133
Gas making labor only	.0272
Repairing linings and checkering water gas apparatus	.008
Total in water gas house	.3485

Balance of cost including both coal gas and water gas.

COST PER M. CU. FT. MADE

Mixed gas steam	.0192
Purification	.0073
Manufacturing labor	.0116
Manufacturing supplies	.0168
General works repairs	.0110
Total mixed gas items	.0659

TOTAL COST PER M. CU. FT. MADE

Coal gas in retort house	.3275
Water gas in water gas house	.3485
Cost of 2 M. cu. ft	.6760

AVERAGE COST OF MIXED GAS IN HOLDER

Considered that one-half of each is made		.3380
Plus mixed gas items		.0659
Total cost in holder		.4039
Amount of gas made	1,000 cu. ft.	
Average leakage 8.7 per cent	87 cu. ft.	
Amount of gas sold	913 cu. ft.	

Cost of gas in holder per M. cu. ft. sold		.4423
Distribution labor and supplies and steam for compressors, including repairs to distributing system		.0704
Salaries officers		.0283
Accounting department		.0563
Office supplies and expense	.1741	.0219
Canvassing and advertising		.0314
Rent		.0159
Stationery and postage		.0114
Stable		.0089
Insurance		.0115
Taxes	.0609	.0433
Legal expense		.0061
Total of above items		.7477
Depreciation per M. cu. ft. sold		.1395
Total cost at consumers' burner		.8872

Mr. Markley gives a full explanation of his experience and the method of arriving at his figures (R. 87 to 90 inclusive).

GEORGE MCLEAN computed the cost of manufacturing and distributing gas at Cedar Rapids based on his long experience in the business and prices at Cedar Rapids, Iowa. The same is set forth in Exhibit 10 (R. 188), which is as follows:

EXHIBIT NO. 10

GEO. MCLEAN'S ESTIMATE ON COAL GAS, 1907

Coal to cost $4.62 a ton in shed.
Yield 9,700 cu. ft. of gas per ton of coal.
Residuals to sell for 50 per cent. cost of coal.
Leakage 8½ per cent. of gas made.

COST PER M. CU. FT. SOLD

Coal	.26
Mfg. labor and salaries	.1478
Labor on residuals	.02086
Purifying materials	.006
Water at works	.00569
Sickness and disability, works employes	.005
Repairs works	.03926
Holder cost	.48461
Distribution labor and salaries	.09023
General expense	.035
Legal expense	.008
Bad debts	.0025
Taxes	.0355
Promotion and advertising	.0350

Mr. Hall allowed (R. 317 Or. 528) only five cents per thousand cubic feet of gas sold for depreciation to cover renewals and general diminution in the value of the plant, while the company charged off depreciation to the extent of a little over twelve cents per thousand cubic feet.

e-3. *Certain repairs.*

Mr. Hall finds the general repair accounts of this company for the five years to be as follows: (R. 601).

1902	$1915.27
1903	1463.91
1904	1437.49
1905	1940.90
1906	3258.38

and in his computations by which he arrives at the cost of the manufacture and distribution of gas, only these amounts are included in general repairs, and his calculations suppose that all other repairs and all general depreciation can be *fairly covered by five cents per thousand cubic feet* of gas sold.

Mr. Hall did not claim to be an expert in the gas business, but took this amount of depreciation arbitrarily, and made his computation thereon, while the plaintiff in error introduced witnesses on the subject of depreciation, who testified, as follows:

f. *Evidence of plaintiff in error as to depreciation.*

Edward G. Pratt (R. 239; Exhibit 19). This exhibit sets forth the various classes of property, the rate per cent of depreciation allowed, and shows that depreciation on the physical properties of the company would amount to $15,600.00 a year, which is in excess by $2,000 per annum of the depreciation charged off by the company, and these items of depreciation do not take into account injuries and damages, legal expenses, bad debts or promoting new business, which would amount to about ½ of 1%. Colonel Pratt bases his estimate of depreciation upon the actual property of the company and his long experience in and knowledge of the gas business. (R. 239-240-1-2).

J. C. Markley gives also a detailed table of depreciation (R. 86-7) and computes the total depreciations to be $12,880.00 not including daily operating repairs, which is equivalent to .1395 cents per thousand cubic feet, or a little more than the average amount of depreciation charged off by the company for the period of five years preceding 1907.

He says:

"In my schedule of depreciation the amount that I have allowed

for depreciation is based upon my experience during the whole time that I have been employed by the Chicago company and all the time I have been in the gas business while I was working for the bond company I had opportunity to observe the conditions of machinery that had been in operation for different years, and I made a study of that subject. It is absolutely fair that some provision should be made for the replacement of the plant when it is worn out. If no provision was made for the replacement of the physical properties as they wear out, the time would come when the plant would be gone. It would not make any difference whether this amount allowed for depreciation was put into a reserve fund or put back into the plant. If put into a reserve fund, the company would have to secure money elsewhere. I know of no manufacturing business where machinery does not become obsolete, and gradually wear out and has to be superceded by new machinery."

And submits the following table of depreciation:

Water gas apparatus (old)	$ 4,500.00	10 per cent	$ 450.00
Engines, blowers and retort tools, etc.	697.00	6 per cent	41.82
Boiler plant	2,470.00	8 per cent	197.60
Station meters and instruments	2,802.00	5 per cent	140.10
Scrubbers and condensers	8,970.00	4 per cent	394.80
Exhausters and compressors	2,525.00	6 per cent	151.50
Purifier boxes	5,000.00	4 per cent	200.00
Pumps	230.00	10 per cent	23.00
Street governor	625.00	6 per cent	37.50
Scales	200.00	10 per cent	20.00
Yard connections	1,476.00	2 per cent	29.52
Tools at works	582.50	10 per cent	58.25
	$179,968.50		$ 6,917.09

DISTRIBUTION SYSTEM

Street mains	$119,856.00	2 per cent	$ 2,397.12
Services	15,289.00	6 per cent	917.34
Meters	29,384.00	8 per cent	2,350.72
Arc lamps	3,575.00	10 per cent	35.75
Teams	1,185.00	6 per cent	71.10
Office furniture	1,866.00	8 per cent	149.28
Meters in stock	562.00	8 per cent	44.96
	$171,717.00		$ 5,966.27
Total depreciation works			$ 6,917.09
Total depreciation distribution			5,966.27
			$12,883.36

$12,883.36 spread over annual sales of 92,306,000 cubic feet ..... 13.95c per M.

E. G. Cowdery (R. 70, Or. 113) allows for depreciation and for reserves 10 cents per thousand cubic feet, and says:

> "This includes depreciation of the plant through a long series of years, also the plant becoming obsolete by new methods being adopted, which makes it necessary to replace parts of the plant, covers possible improvements in the plant and supposed to cover all sorts of contingencies that are not otherwise covered. To my best knowledge of the gas business that figure is very reasonable. It is true that much of the gas machinery wears out faster than other machinery, and there are new discoveries and inventions all the time that tend to render present machinery obsolete.
>
> "In a general way I took into consideration depreciation of buildings, pipes, apparatus and all that went in to make up the works, but did not consider the details.
>
> "I saw a gas works at Milwaukee completely destroyed and a fourth one is now there, in the last 40 years. I saw a plant destroyed at St. Louis to make room for something better. Nothing was saved." (R. 72-73).

Mr. McClain in his estimate computes depreciation at 11¾c per M. c. f. (R. 190), and gives a table of such depreciation on the property of plaintiff in error (R. 191). He says these depreciations are of the physical properties only, and do not include any of the hazards. The amounts represent what in his judgment and experience are reasonable for each year for depreciation and do not include physical, political, economic or sociological hazards. Among physical hazards are, explosion of benches or purifiers or hydraulic mains, which are likely to occur in any works. Another physical hazard is spontaneous combustion of coal from which he had experienced trouble, also there might be an explosion of the holder (R. 93-4).

Among economic hazards, Mr. McClain mentions competition with electricity, and says new inventions in electric lamps are coming into vogue daily, making the use of electricity much cheaper.

With reference to the political hazards, Mr. McClain says:

> "We have had large expense for injuries to our business by what is called "Raiders." We have spent a large amount of time and expended a large amount for printing, sending out circulars and letters, and we would meet the assertions of the "raiders" with facts and figures. Have been compelled sometimes on account of expense to forego the compensation that the stockholders ought to have. We have had to contend against an overwhelming adverse sentiment in the beginning, and this hazard has always affected our stock and franchise."

Among political hazards, he mentions the fact that other persons frequently ask for franchises for competing works.

He further says on cross-examination (R. 199, Or. 323):

"The basis of my depreciation is not that of new works, but the buildings in their present condition."

GLENN M. AVERILL (R. 152) says:

"In arriving at the depreciation, we figured it on a percentage basis, and at the rate of 5% per year on the book value of the plant."

"Q. Is that based on your experience?"

"A. My experience is that we have had to rebuild the plant at the end of ten years, and the second time at the end of twenty years."

"In 1903 (R. 165) we built the Holder No. 3, and put in exhausters, and did a lot of work in the engine-room, so that the new holder could be used. The next year, 1904, we extended the Purifying House, also built a new steel coal shed. In 1905, the Purifying building and apparatus was installed. In 1906 the scrubbing and condensing apparatus was installed, including the ammonia concentrator (R. 166). (R. 167). In 1902 we installed over $9,000 worth of mains, in 1903, $1,000 worth, in 1904, $6,800 worth, in 1905, $14,590 worth and in 1906, $10,600 worth. The Purifying House and equipment cost $9,427. The scrubbing apparatus cost $8,000, Boiler $1,500, Building $1,200. Holder No. 3 cost $45,490.00."

(R. 170) "We refilled one of the benches of 6's in 1905, and one of the benches of 9's in 1906.

"The repair account for 1906 was $3,258.38. We had to borrow during these years $15,000 on bonds and $16,000 on bills payable. (R. 168).

"My idea was that we should charge off depreciation at the rate of 5% on the value of the plant. I did not always charge that much. I did not value the plant each year, but made an arbitrary entry on the approximate estimate, but not on an inventory or any exact figures, but just having in mind the book value of the plant. One year it was more than five per cent, but there were some years skipped in there. I think the first charge for depreciation was made in 1899, and was $7,500.00. In each case where I charged off depreciation, it was approximately in my opinion as I thought it should be entered up.

"The $13,000 depreciation for 1906 went into the plant for renewals, repairs and extensions, and also that charged for 1905 and the other years." (R. 153, Or. 251).

MR. KELLOGG (R. 118, Or. 196), after making an examination of this company's books, allowed the depreciation charged by the company to stand. He says:

"I assumed the depreciation as given on the books. The amount of depreciation charged off for the two years I think was a proper item to be entered for the two years, and in my judgment they are too low; they should adopt some rule; ordinarily 4 per cent is the rule and the charges for these two years do not come to that, and is a little lower than customary. It is customary to enter a charge

of about 4 per cent for depreciation on the whole physical property, and I can give instances where it has been done. I say there is a rule among gas companies to write such a sum as this company has for depreciation."

g. *Interest on Bonds eliminated by Hall.*

The next item eliminated is Interest on Bonds, which for each the years 1905 and 1906 was $3,750.00.

Mr. Hall says (R. 604) that the interest on bonds is not a charge against the cost of the product. He says, however, it is a charge against profits in the business before any profit accrues to any of the stockholders. The interest on the bonds must be paid, and if it is taken out as part of the cost of the operation of the plant, it diminishes the net returns by that much, and so far as the net income of the company is concerned, it makes no difference whether it is taken out in one place or the other. It is certainly a proper charge in the operation of the plant, and in this case the bond issue is very low, being only $75,000 and bearing five per cent interest.

GLENN M. AVERILL says (R. 155) that the capital that is represented by the bonds should earn for the risks that the stockholder does and the bondholder does not carry, and in his judgment it ought to equal the bond interest. The stockholders should be allowed to take advantage of the fact that money can be borrowed on bonds from people who are not willing to take the risk of investment in the plant. The entire capital invested in the plant should earn a fair rate of dividend, and if money can be borrowed for less than that, it should go to the people who have to underwrite the bonds and who take the risk.

h. *Interest on loans eliminated by Hall.*

Mr. Hall also eliminates the interest on loans,
amounting in 1905 to.....$142.29
and in 1906 to..... 866.17

Where it was necessary for the company to borrow money to carry on its business, it seems proper to charge as part of the operating expenses, this item of interest on loans, as this had to be paid, and it is immaterial so far as the income is concerned whether it is included as a part of the price of manufactured gas, or whether it is deducted from the net income.

i. *Annex taxes eliminated.*

The "Annex" taxes are also deducted. The company acquired this property for its immediate necessities, and it seems entirely proper to

include the taxes as a part of operating expenses. That the five lots across the street from the gas works known as the "Annex" in the testimony should have been included in the valuation of the plant of plaintiff in error, is shown on page 39 of this Brief.

j. *Renewal of benches eliminated by Hall.*

Mr. Hall found on the books of the company for the year 1906, an item of $1,862.76 which was expended for renewal of benches. These benches frequently burn out, and it is necessary to renew them, and they were actually renewed. However, he eliminates this item from the cost of manufacturing and distributing gas as shown by his table, supra. Mr. Suchomal, the superintendent of the works, says in regard to this item:

> "I remember the refilling of the benches of 9's; they were out in 1906. They became useless in August of that year. Two of them had been in use about 22 months and one 18 months. They were in bad shape and were leaking and were burned out. The first one we refilled in July and the material was on hand for refilling the other three in 1906. (R. 418, Or. 698).

Mr. McClain says that this item should be charged for the expense of that year. (R. 426, Or. 711). Mr. Pratt makes the same statement (R. 433, Or. 725).

k. *Repairs of Purifiers — $5,627.00 item. Eliminated by Hall.*

Mr. Averill clearly explains this item as follows:

> "Q. There has been reference to an item of $5,627.00. Explain that." (R. 147).
>
> "A. That is on the trial balance book. The trial balance book is the book in which we make comparative estimates of the amount of business we are doing. This entry of $5,627.00 was made with instructions to the bookkeeper that when the account, which was not then complete, that is the new purifier account, when that was complete and went into the plant and began operation, that was to be charged to repairs, because there were five pieces of machinery that were discarded. The notation was made there to give him the amount. And it should be taken out of the item paid on gas machinery, $8,000.00, and new purifier room, $9,427.00 on Exhibit 'I' of Exhibit 25. . . My intention was to take out of capital the amount that was represented by the cost of the old apparatus, those were my instructions to the bookkeeper. And in my judgment that was correct." "The statement Exhibit 32 is made up from the books of the company. It is made up exactly as the books are kept, with the exception that in the operating statement of 1905 the item $5,627.00 has been included as it was intended it should be in the manufacture." "The entry for that item was made by myself on the trial balance book in December

of that year." "That notation was there prior to October, 1906, and was there at the time the ordinance was passed."

Mr. Pratt, in his estimate of the cost of gas, includes this item, as, "for repairs of purifiers $5,627.00," and says: (R. 236-7.)

"I ascertained that this restoring of the purifiers had been carried on during the year, but was not completed until the end of the year and these items were carried and no account made of that work until the end of the year. It is my opinion that it was a proper charge to the year of 1905. The complaint that I would make is that it wasn't charged along through the year as the work was being done."

Geo. B. Dutton says: (R. 428.)

"There is such an item as $5,627.00 in the repair account for 1905. It is in lead pencil on the monthly balance book. It was there prior to the time the city experts saw the books."

Mr. Hall also makes deductions for the years 1902, 1903, and 1904 of like character. The evidence shows without dispute that these items were all expenses incurred by the company and entered into the cost of manufacturing gas, and yet in order to reduce the price to 64c per M. c. f., they are eliminated by Mr. Hall.

If these items which were improperly eliminated from the cost of manufactured gas by Mr. Hall are included, then the cost of gas would be about fifteen cents per thousand cubic feet more than the 64 cents computed by Mr. Hall, or about 80 cents per thousand cubic feet, and this substantially agrees with the opinions of the experts, and with the experience of the company. So it seems fair to say on the evidence in this case, that the cost of manufacturing and distributing gas in Cedar Rapids, Iowa, is at least 85 cents per thousand cubic feet.

1. *Hall's apparent cost per M. c. f. of gas sold made less by arbitrary increase of amount used as divisor.*

It was clearly shown in the testimony (R. 149, Or. 243) that there was an error in the meter readings, discovered by the company, and that the same was thoroughly tested and corrected. The percentage of error was ascertained, and the total amount of gas manufactured was thereby reduced as shown by the figures of the company.

The percentage of apparent leakage of gas for the years 1905 and 1906 were unusually large. (R. 315, Or. 523), and Mr. Hall says this leakage is excessive. The gas manufactured is measured by a drum-like cylinder, partially filled with water (R. 149), called a station meter, which was purchased from the St. Paul Gas Company in June, 1905. This meter was found not to be correct and adjusted. In explanation, Mr. Glenn M. Averill (R. 148-9, Or. 243) says:

"For the years 1905 and 1906 the figures for the amount of gas sent out and leakage have been corrected. The station meter that we put in in August, 1905, had two sets of water line marks on it, that is, where the water line should be carried to register correctly. We had no means of making a test and so sent to the factory and got a station prover, along in the summer of 1907. We found our meter had been 4½ per cent fast and that we had not made the gas we thought we had. I then made the correction. This correction did not in any way affect the amount of gas that was consumed or that was shown to have gone through the customers' meters; it simply affected the supposed amount of gas made. If the meter showed we were making more gas than we actually were, it would simply increase the leakage or unaccounted for gas."

Mr. Suchomal assisted in testing the meter, and says the meter was 4½% fast.

Mr. Hall says:

"The divisor I used for 1905 and 1906 was the amount of gas before the meter was corrected."

And he also says (R. 342):

"I made no deduction on the meter readings for any corrections of the meter in obtaining my divisor. If I had made that deduction I would have had a less amount of gas manufactured and a corresponding increased cost per M. c. f., but the total cost would be the same. The figures where I include the excess of gas over the correct amount would make an apparent increase in the cost at the station per M. c. f. The divisor I used in that respect for 1905 and 1906 included the amounts of gas shown by the meter before it was corrected and without correction for temperature. The divisor which I obtained was the largest that could be obtained by leaving out the corrections for temperature and fast meter."

The divisor used by Mr. Hall for 1905 was..... 88,634,210
(R. 325 & R. 609).
The divisor used by Mr. Hall for 1906 was (R. 325)..... 106,616,320
The divisor for 1905 should have been..... 76,782,300
(R. 153 & R. 648).
The divisor for 1906 should have been..... 91,173,200
(R. 153 & R. 648).

Let us now illustrate the results of Mr. Hall's method of figuring: Coal is the principal item in the cost of manufacturing gas. He finds (R. 609) the total cost of coal for the year 1906 to be $35,942.03, and the cost of coal for each thousand cubic feet of gas 33.71c by using 106,616,320 as the divisor, while if he had used the true divisor applied to his own figures, as to the cost of coal, the result would have been 38c per M. c. f., or a difference of 5c per M. c. f. as applied to the cost of coal alone, and when the other items are considered on the same

basis it covers the difference of about 15 cents per thousand cubic feet made by Mr. Hall between what he considers the cost of gas and the actual cost to the company.

6.

VALUE OF THE INVESTMENT OF PLAINTIFF IN ERROR AS FIXED BY THE SUPREME COURT OF IOWA

a. The Supreme Court of Iowa (R. 647) fixed the value of the entire plant as "somewhere between $300,000 and $350,000," and in doing so, reduced the value as fixed by the plaintiff's witnesses as follows:

On the Real Estate including buildings $15,000 to $20,000 (R. 645). The court found the value of the High Pressure Pipe to the City Limits to be $5,483, and allowed in the appraisement only one-fourth thereof, or $1,370, while in fact the cost of the high pressure pipe to the city limits was shown to be $11,350.15 by the undisputed evidence.

Colonel Pratt (R. 33) sets forth in Schedule "B" the 23,760 ft. of 3-inch high pressure pipe connecting with the Marion system of mains at $5,384. At Record 42 he shows that this was an error, and makes the correction, and his testimony is undisputed. He says:

> "The price of 23c a foot which I used in calculating the cost of the 3-inch pipe only covers the cost of ordinary steel or wrought iron pipe, but the pipe is high pressure and would cost 46.76c a foot laid, making a total cost of the 23,760 feet connecting with the Marion system $11,350.15."
>
> "With this correction the total value of street mains is $126,-350.15."

This was a high pressure 4-inch pipe. (Testimony G. M. Averill, R. 160, Or. 263).

Thus the Supreme Court made a mistake of over $6,000 as to the cost of the high pressure main to the city limits, and allowed only $1,370.00, or ¼ of $5,483.00 therefor, while even admitting that only one-fourth of it should be appraised as part of the Cedar Rapids works, the amount should have been ¼ of $11,350.15, or $2,750.00.

b. *The Fittings Account.*

The Supreme Court entirely misapprehended the fittings account (R. 652). The expert Hall claimed (R. 602) that the expense of installing meters and stoves and the like should be charged to the capital account, while the company charged it to operating expenses. The meters themselves were properly charged by the company to the capital account, but the city maintains a meter testing officer — people complain about their meters, and it is necessary to take them out, have them tested, and re-set them. Besides, in the ordinary conduct of its

business, the company is continually taking out and re-setting meters, and these expenses are not charged to the consumer, but are a part of operating expenses, and these are the items that are included in the fittings account. The reason that this account was larger in 1905 and 1906 than previously was that the company was making a campaign to increase its business and selling and setting an increased number of stoves and meters.

MR. GLENN M. AVERILL (R. 173) says:

> "J. R. Meader was originally the business agent of the Peoples' Gas Light Company of Chicago. He came to Cedar Rapids, furnished his own stoves, office help, did his own advertising, had his own solicitors and solicited business along our mains in parts of the city where I was unable to get enough consumers to make it profitable to extend the mains. When the consumer wanted a gas stove, he entered into a contract to furnish it in the house, if a gas connection was already in the house for $15.50, as I remember, and in addition to setting the stove in there, they were entitled to 8,000 feet of gas to be used on the premises where the stove was set and within twelve months. He collected the $15.50 from the applicant for the stove and the gas company connected the stove up and for that work received no pay, but received $5.00 or $5.50 on each one of the contracts for the 8,000 feet of gas we furnished, and that money went into the receipts of the company, and the total gain in business for the year was something over 700 consumers."

Even Mr. Hall, after critically examining these accounts, explains the same (R. 591-2), and allowed them to stand (R. 602) as a part of the cost of manufacturing gas.

e. The Supreme Court entirely eliminated from the value of plaintiff's plant, the following items:

Old Purifier	$ 1,600.00
Paving over Mains	43,580.00
Interest on Capital during construction	22,415.00
Promotion and organization	14,943.69
Engineering	18,679.61
The "Annex"	16,500.00
	$117,718.30

It also reduced the working capital from $25,000.00 to $2,500.00 and denied any allowance for going value.

If we add to the value as found by the Supreme Court	$300,000.00 to	$350,000.00
Item of Paving over Mains, which the testimony shows clearly should have been included in the value	43,580.00	43,580.00

Difference in the high pressure pipe which was made by mistake of the court.....	1,380.00	1,380.00
Old Purifier.....	1,600.00	1,600.00
And the "Annex," valued at.....	16,500.00	16,500.00
The total would be.....	$363,060.00 to	$413,060.00
But the following items are also eliminated by the Supreme Court:		
Working capital.....		$ 22,500.00
Reduction on Real Estate.....		20,000.00
Interest on capital during construction....		22,415.00
Promotion and organization.....		14,943.69
Engineering		18,679.61
These last three were items of expense in creation of the going value of the plant, and certainly should be included, and if we add these three items to the above, we have the value of the plant.....	$461,598.30 or	$511,598.30

In view of these erroneous omissions, it is certainly fair to say upon this record, that the value of plaintiff's investment is over $450,000.00.

7.

Cost of manufacturing and distributing gas as fixed by the Supreme Court of Iowa

a. The Supreme Court found the cost of manufacturing and distributing gas not to exceed (R. 652) 6[illegible].12c per M. c. f., using Hall's figures for 1906 (R. 610), but in doing so only 5c per M. c. f. depreciation was allowed, while it should have been at least 10c as shown by the testimony of the witnesses and the experience of the company.

In arriving at the above cost for gas for the year 1906, Mr. Hall not only reduced the depreciation to 5c per M. c. f., but also eliminated the item of $1,862.76 for new benches, charging them to the capital account, while the testimony clearly shows that they should be charged to operating expenses. (See this Brief, page 65).

b. The court in estimating the probable income of the company for the year 1907 under the 90c ordinance left out of consideration at least three important items, which it was clearly established by the evidence would increase the cost of gas for 1907 over the cost for 1906:

Removal of benches as above (Assignment 14-½).....	$ 1,862.76
At about the time of the passage of the 90c ordinance, the valuation of the plaintiff's property for taxation was raised by the city council, and the additional taxes based on the same rate of levy would be for the year 1907..... (Test. G. M. Averill, R. 152; A. T. Averill, R. 177).	3,392.00
To this should be added as increased cost for the year 1907 over that of 1906 at least.....	4,500.00

being for increased cost of collection of bills on account of the forced discontinuance of the discount method. (See this Brief, page 21, for the detailed statement of the facts in reference thereto).
5c per M. c. f. on 103,079,190 c. f. estimated sales..... 5,153.95

Total cost of items of gas left out by the Supreme Court in its estimate for 1907.....$14,908.71
The cost per M. c. f. of gas for 1906, as found by the Supreme Court of Iowa..... 68.12c
Add increased taxes based on estimated amount of sales for 1907, 103,079,190 c. f., approximately..... 03.3 c
Additional cost of collection, approximately..... 04.4 c
Renewal of benches, approximately..... 01.8 c
5c additional depreciation..... 05.0 c

The total would be, approximately..... 82.62c
Ninety cents less 82.62c leaves..... 7.38c
per M. c. f. as estimated profit for 1907.

Apply this to the estimated sale of 103,079,190 c. f., we have the estimated profit for 1907.....$7,609.24,
or about 2½% on $300,000 — the smallest valuation made by the Supreme Court, or a little over 2% on a valuation of $350,000, or 1.9% on a valuation of $400,000 or 1.6% on $450,000.

It is to be noted that in the above estimates of the cost of manufacturing gas, it has been assumed that the company would be able to conduct its business without accidents, such as, injuries to employees, or explosions or other serious accidents to machinery, etc. One such accident resulting in damage to the works, or injury to an employee would entirely wipe out the profit.

VII

BRIEF ON THE LAW

DIVISION A

As to the Impairment of the Obligation of the Franchise Contract

1

ASSIGNMENTS OF ERROR NOS. 1 AND 2

Assignment No. 1. The court erred in holding that the provision of plaintiff's franchise granted by Ordinance No. 427 of the City of Cedar Rapids, Iowa, as follows:

> "That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20c per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption."

did not constitute a contract, between the plaintiff and the City of Cedar Rapids, and in holding that the obligation thereof was not impaired by Ordinance No. 752, because said Ordinance No. 752 fixed the price of gas, as follows:

> "Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation, shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city,"

and thus destroyed the provision of the franchise allowing the plaintiff in error to charge such a rate as would admit of allowing to consumers a substantial discount on all bills for prompt payment. That said provision for discount for prompt payment of bills is a valuable contract right, the obligation of which is impaired by said Ordinance No. 752 and by the decision of the Supreme Court of Iowa holding the same to be valid, in violation of Section 10 of Article I of the Constitution of the United States. (Record 664 this Brief 8).

Assignment No. 2. The court erred in refusing to hold that a contract existed between the City of Cedar Rapids and plaintiff permitting it to charge a sufficient rate to permit of a discount of 20c per thousand feet for prompt payment, and that the ordinance fixing the price to be charged for gas at 90c per thousand, without making provision for this discount was an impairment of the obligation of such contract and void as in violation of Section 10 of Article I of the Constitution of the United States. (Record 664 this Brief 8).

2

THERE IS NO CONFLICT IN THE EVIDENCE AS TO THE VALUE AND EFFICIENCY OF THE DISCOUNT PROVISION OF THE FRANCHISE

All witnesses for both parties agree:

a. That the discount provision is in general use by public utilities, including the Cedar Rapids city water works.

b. That it is an efficient and satisfactory method of securing prompt payment of bills.

c. That to turn off the gas would create war between the company and its consumers, and greatly damage its business.

d. That a deposit or payment in advance is not practicable, except as to insolvent consumers.

e. That to collect plaintiff's bills, numbering about 4,000 per month, would cost the company a considerable amount of money; Mr. Fox, Superintendent of the defendant's water works, admits that it would cost about $4,500 per annum. (R. 275). (This Brief p. 21 *et seq.*)

3

THE AUTHORITIES

1. The ordinance granting the plaintiff in error a franchise is a contract.

Cedar Rapids Water Co. vs. Cedar Rapids, Iowa, 118 Iowa, 234, where the court makes a clear distinction between corporate franchises, and "contract" franchises, and says:

"This latter franchise is a contract between the parties having in general the same incidents subject to the same interpretation which would obtain between other contracting parties."

Dartmouth College case, 4 Wheat., 518; 4 L. ed., 629, where Mr. Justice Story said:

> "In my justment, it is perfectly clear that any act of a legislature which takes away any powers or franchises vested by its charter in a private corporation, or which restrains or controls the legitimate exercise of them . . . is a violation of the obligations of that charter. If the legislature mean to claim such an authority, it must be reserved in the grant."

An unconditional grant by a State constitutes a contract, which is entitled to protection under the Constitution just as fully as a grant made by an individual.

Fletcher vs. Peck, 6 Cranch, 87.

Sinking Fund Cases, 99 U. S., 700, 719.

New Orleans Water Works Co. vs. Rivers, 115 U. S., 674, 681.
People vs. O'Brien, 111 N. Y., 1; 18 N. E., 692.

2. The contract on the part of the plaintiff is to furnish gas to private consumers at a rate not to exceed $1.80 per M. c. f. with 20c per M. c. f. discount if paid on or before the 10th of the succeeding month; that it shall furnish the city gas at 10c per M. c. f. less, and that it shall at all times, unavoidable accidents excepted, furnish all gas required by the city and its inhabitants of as good a quality as that furnished by any other company in Iowa, and permanently maintain a substantial works equal to the best of any city of the same or less population.

3. The contract on the part of the city, is that the plaintiff shall have the right to enjoy the franchise during its term under the conditions named, and to charge rates fixed in the franchise until other rates are legally fixed by the city.

4. ONE OF THE VALUABLE RIGHTS GRANTED TO PLAINTIFF, WAS THAT OF PROVIDING A DISCOUNT FOR PROMPT PAYMENT. See this Brief, page 17.

5. In addition to the express terms, were these implied agreements:

a. There was reserved to the city the power to fix the rates in the future as provided by Section 725 of the Code of Iowa.

b. Such rates so fixed must not be unremunerative to the company.

c. *In so fixing such rates, the city shall not impair the obligation of the franchise contract.*

d. Therefore, the city had no power by the adoption of the ordinance providing for the flat rate of 90c per M. c. f., to abolish the discount provision authorized and provided for in the franchise.

6. The reserve powers of the General Assembly over corporations are found in Section 1619 of the Code of Iowa.

7. The General Assembly, by Section 725 of the Code, conferred on the city only the power to fix rates for gas, etc., and provided only that that power should not be abridged by ordinance, resolution or contract. So there was no power reserved to the city to alter the franchise in any other respect than as to the rate.

8. The power to pass ordinances regulating rates having been conferred on the city by the legislature, an ordinance fixing the 90c rate is a law within the meaning of the Constitution.

United States vs. New Orleans, 98 U. S., 381-2.
Meriweather vs. Garrett, 102 U. S., 472.

Mayor and Ald. City of Knoxville vs. Knoxville Water Co., 212 U. S., 1; 53 L. Ed., 371.

Prentiss vs. Southern Pac. Rd. Co., 211 U. S., 210; 53 L. Ed., 150

Honolulu Rapid Transit & Loan Co. vs. Hawaii, 211 U. S., 282; 53 L. Ed., 186.

Without legislative authority the city would have no power to pass the ordinance.

Wisconsin M. & P. R. Co. vs. Jacobson, 179 U. S., 297; 45 L. Ed., 199.

9. A legislative enactment in the ordinary form of a statute may contain provisions which, when accepted and acted upon by individuals, become contracts between them and the state within the protection of Section 10 of Article I of the Federal Constitution.

New Jersey vs. Yard, 95 U. S., 104-13.

Walla Walla vs. Walla Walla Water Company, 172 U. S., 1.

10. Public utility corporations are entitled to exercise their franchises during the terms thereof, and the obligations of such contracts are protected by the Constitution.

Fisk vs. Jefferson Co., Police Jury, 116 U. S., 135.

Burton vs. Koshkonong, 151 Mass., 364.

Capital City Gas Co. vs. Des Moines, 72 Fed., 831.

Central Trust Co. vs. Citizens Street Ry. Co., 82 Fed., 13.

Reagan vs. Farmers' Loan and Trust Co., 154 U. S., 392; sc. 38 L. Ed., 1022.

11. The plaintiff, having invested a large sum of money in the construction and maintenance of its gas plant on the faith of the franchise, has vested rights to continue to enjoy the franchise during its term, including the discount provision, and to charge remunerative rates for gas, and these rights cannot be impaired or destroyed by the city under the guise of its reserved power to fix rates.

Railroad Tax Cases, 13 Fed., 756.

Detroit vs. Detroit Howell Plant Road Co., 43 Mich., 140; 5 N. W., 275.

Com. vs. Essex Co., 13 Gray, 239.

Railroad Co. vs. Maine, 96 U. S., 499; 24 L. ed., 836.

Sinking Fund Cases, 99 U. S., 700.

12. It is perfectly plain from the testimony in this case, that the plaintiff in error cannot provide for a discount below 90c per M. c. f. and earn any return on its property whatever. Therefore, it is abso-

lutely deprived, by the ordinance fixing the 90c rate, of the discount provision contained in its franchise. In fixing the 90c rate, the city was bound to recognize the discount provision, and therefore in all fairness should at least have provided in the ordinance that the rate should be $1.00 per M. c. f. with 10c per M. c. f. discount if paid on or before the 10th of the succeeding month, thereby in fact fixing a 90c rate for gas. By its act in fixing 90c as a flat rate, it, in effect, made the rate not over 85c at the most.

13. The city, in granting the franchise, contracted with the plaintiff in error that in fixing rates in the future, it would establish such rates as that the plaintiff could make a discount therefrom for prompt payment as a simple and efficient means of collecting its bills, and that the price for gas after the deduction of the discount should afford the plaintiff in error a reasonable income on the fair value of its investment.

14. The city in granting the franchise had full power to agree with the plaintiff in error as to the method and means of collecting its bills by a provision for discount for prompt payment, and having so agreed, it has no right under Section 10 of Article I of the Constitution of the United States to abrogate that agreement.

15. The provisions of the franchise in relation to a discount are not inconsistent with the reserve power of the city to regulate rates in the future. The city could exercise its power to fix rates, and not deprive the plaintiff in error of the benefit of giving a discount for prompt payment, and because the ordinance in question does so deprive plaintiff in error of its contract rights, it is arbitrary and unreasonable and in violation of the Constitution of the United States. The exercise by the city of its power to fix rates must be with due regard to the contract rights of the plaintiff in error.

16. Under the 90c ordinance, the plaintiff in error could not even attach a penalty for a failure to make prompt payment, because such penalty would be in effect the charging of more than 90c for gas to those who did not promptly pay, and the rate ordinance prohibits the charging or receiving by plaintiff in error of anything in excess of 90c per M. c. f. for gas, and provides a severe punishment for so doing.

17. The 90c ordinance forced the plaintiff in error to change its whole system of making collections of its bills, which are about 4,000 in number per month (R. 648), and thus imposes upon it additional burdens and deprives the plaintiff in error of the valuable and substantial right acquired by it under the franchise, to have the rates so fixed that therefrom a reasonable amount of discount might be allowed for prompt payment.

18. In its opinion, the Supreme Court of Iowa does not meet this

question, simply citing the cases to the effect that public service corporations may adopt reasonable rules and regulations for the transaction of their business.

19. It is elementary that such rules and regulations must not conflict with the ordinances of the city or the statutes of the state. The question here presented is not whether the company may adopt reasonable rules and regulations for the conduct of its business, but whether the city having contracted in the original franchise with the plaintiff in error that it shall have the right to collect its bills by a system of discounts, may arbitrarily deprive the plaintiff in error of such right and compel it to adopt some other method.

20. The question is not whether some other method may be adopted, which might secure to the company the payment of its bills, but whether the city, having agreed that the company may use the discount, can deprive it thereof.

21. But there is no other efficient and satisfactory method that can be adopted by the plaintiff in error, because:

a. It cannot exact a penalty for failure to make prompt payment, as this would be simply a method of adding to the price of gas to those who do not pay promptly, and would be in violation of the provisions of the rate ordinance.

b. The company cannot turn off the gas and adopt the rule that it will not turn it on again unless the expense thereof is paid, and arrearages paid. (See cases cited by the Supreme Court of Iowa).

c. The company cannot establish a rule on the theory that the people as a whole are dishonest. Therefore, it could not require payment in advance of everybody, nor even a deposit in advance from everybody, because nobody knows how much gas will be used during a given period, and it cannot require a deposit or security in advance, except from such persons as are known to be dishonest or insolvent.

d. "Doubtless the abandonment of the common method of discount for prompt payment would deprive the company of an efficient aid to the quick collection of its bills, but in a case of a prime necessity, like water, there are other methods of enforcing prompt payment, though it is not unlikely that the elimination of the discount rate would add somewhat to the cost of collection, and thereby to the operating expenses."

Mayor and Ald. City of Knoxville vs. Knoxville Water Co., 212 U. S., 1; 53 L. Ed., 371.

In the above case, no point was made that the original franchise provided for the discount provision as in the instant case, and that its abrogation was an impairment of the obligation of the contract.

22. The company cannot impose a penalty for the violation of one

of its regulations, nor refuse to furnish gas on the failure of the consumer to pay the penalty. *It could at convenient periods require reasonable security for payment in proper amounts from persons not financially responsible.*

Shepard vs. Milwaukee Gas Co., 70 Am. Dec., 479; 6 Wis., 539.

Williams vs. Mutual Gas Co., 18 N. W., 236.

In *Harbison vs. Knoxville Water Co.*, 53 S. W. (Tenn), 933, the court held that the company might require three months' payment for water in advance, but said:

> "We are not dealing with the bill where the residence of the consumer is metered and the exact quantity used by him can be measured."

Gas is all metered.

24. Besides there is this further objection to demanding payment of all consumers in advance in this case: This would amount to the collection of a rate in excess of 90c per thousand cubic feet by at least as much as the interest on the money would amount to, until the gas would be used, and therefore would be in violation of the 90c ordinance.

25. The only instance in which the company might demand advance payment, is where it appears to be necessary to protect from the loss of its bills by reason of the financial irresponsibility of the consumer.

26. In the cases cited by the Supreme Court, it was held that the company could not refuse to furnish gas to a consumer because he refused to pay a former bill.

Gas Light Co. vs. Colliday, 25 Md., 1.

State ex. rel. Webster vs. Nebraska Tel. Co., 22 N. W., 239, is to the same effect, and the court said:

> "If the patron was indebted to the company for the use of a telephone, the law gives it an adequate remedy by an action for the amount due."

In *Tacoma Hotel Co. vs. Tacoma Light & Water Co.*, 28 Pac., 517; 14 L. R. A., 669, the consumer knew the rules of the company and had contracted to be bound by them, and the court says:

> "It does not appear that the city has undertaken in any way to fix the price, or lay down rules to govern the business of the company, and that the company might adopt reasonable regulations, and as the answer alleged the regulations to be reasonable, the demurrer admits it."

In the above case, the court decided that the penalty could be collected because the consumer had contracted to pay it, but the court

suggests that the penalty could not be sustained except upon the ground that it was a part of the original price which the consumer contracted and agreed to pay, in case of the contingency arising. It is therefore clear that in the case at bar, no penalty could be attached for failure to make prompt payment.

In *Shires vs. Ewing*, 29 Pac., 320, it is decided that it would be a matter for the courts to determine whether the rules agreed to by the consumer are reasonable or not.

27. The rules of law to be deduced from these cases are:

a. That the company might require a deposit from financially irresponsible consumers to protect it against loss, and to cover the probable amount consumed for the period covered by its bills, which in this case is one month, but in none of these cases was the question raised as to whether or not the requirement of a deposit from persons financially irresponsible would be discriminatory. Of course, if it would be, it could not be done unless applied to all, and if applied to all it would amount to the collection of something in excess of the 90 cent rate.

b. That if consumers failed to pay their bills within a reasonable time after due the company might shut off a further supply.

c. That the company would have no right to attach a penalty by the way of an additional payment for the failure to pay the bills when due, and especially not under the ordinance in this case, which prohibits the collection of anything in excess of 90 cents per M. c. f. for gas.

28. To shut off the supply or demand a deposit does not in any way meet the objections made to this ordinance — that it deprives the plaintiff of a satisfactory and inexpensive way of making its collections by giving a discount for prompt payment, and is therefore an impairment of the obligation of its contract with the city.

29. The discount provision is not calculated to protect the company from losses from bad debts, but:

a. To secure to the company prompt payment of its bills, thereby giving it a steady income.

b. To save the company large expense in the collection of its bills, because it is a fact well known, and proved in this case, that unless the persons who are perfectly good would be required to pay more for their gas after the expiration of the discount period, it is necessary to employ collectors to call on them and collect the bills.

c. To adopt a shut-off policy would make war between the consumers and the company, and it would thereby lose a large amount of its business to competing electric light companies. (R. 276).

30. The Supreme Court, in its opinion, admits that the 90c rate ordinance deprives the plaintiff in error of the benefit of the discount

provision contained in its franchise, and where the plaintiff in error is entitled to bread, or a crumb at least, it is given a stone, but Section 10 of Article I of the Constitution of the United States is broad enough and strong enough not only to protect the people in their rights to the Loaves and Fishes, but to the crumbs as well.

31. Grants of franchises to operate public utilities, when embodying the terms of a contract, are protected by the Federal Constitution from impairment by subsequent legislation, and notwithstanding the principle of strict construction, whatever is plainly granted cannot be taken from the parties entitled thereto by such legislative enactments. Statutes and ordinances of this character are not to be extended by construction, nor should they be deprived of their meaning if it is plainly and clearly expressed.

Minneapolis vs. Minneapolis Street Ry. Co., 215 U. S., 417; 54 L. Ed., 259.

Detroit vs. Detroit Citizens Street Ry Co., 184 U. S., 368; 46 L. Ed., 592; 22 Sup. Ct. Rep., 419.

32. In the franchise in the case at bar, the city only reserved the power of: "regulating or controlling the use of the streets, avenues, and alleys by said company."

33. The discount provision in effect grants to the company the right to impose a penalty for failure to make prompt payment on or before the 10th of the succeeding month, and is of the very essence of the contract.

Minneapolis vs. Minneapolis Street Ry. Co., supra.

Detroit vs. Detroit Citizens Street Ry. Co., supra.

34. Under Section 1619 of the Code, the legislature of Iowa reserved the power to repeal, alter or amend the charters of corporations, but the legislature of Iowa never exercised this power itself, nor did it ever confer this power on the defendant in error either directly or by implication. Therefore, this case does not come within the rule laid down in the case of:

Missouri Pacific Rd. Co. vs. Kansas ex rel Taylor, 216 U. S., 262; 54 L. Ed., 472.

35. In entering into the franchise contract with the defendant in error, the city of Cedar Rapids represented the public, and the contract was for the benefit of the public. The discount provision was incorporated into the contract between the parties for the benefit of the company in its dealings with its customers, and it would be a remarkable doctrine to hold that the other contracting party, the city, has the right to abrogate this provision, especially when no power to alter or amend the franchise in this respect is reserved to the city.

4

THE NINETY CENT RATE ORDINANCE ABROGATES THE SLIDING SCALE OF PRICES FOR GAS

The plaintiff in error charged (R. 150) on a consumption of from:

1000 to 20000 c. f.	$1.25 with 10c discount
20000 to 40000 c. f.	1.10 with 10c discount
40000 to 50000 c. f.	1.05 with 10c discount
50000 and over	1.00 with 10c discount

The fixing of the 90c flat rate, and the abrogation of the discount provision deprive the plaintiff in error of the privilege of continuing in force a sliding scale of prices (R. 561) reducing the price per thousand feet as the consumption increases. It is customary and proper for gas, electric light, water, and power companies to adopt a turning point or point fixing a less price per unit when a larger number of units is used by the consumer. This is a fair and reasonable method of selling gas:

a. Because it admits of competition with electricity for light and power purposes.

b. Also competition with steam, gasoline, and other means of creating power.

c. Because it costs less per unit to furnish a large quantity than a small quantity.

d. The average household consumer in Cedar Rapids uses about 2000 c. f. of gas. (R. 151).

e. The cost of installing and maintaining service connections and of reading the meters and collecting the bills is the same for a small consumer as for a large one.

f. And the cost of distributing is much less per unit for a large number of units than a small number.

Therefore, the company can well afford to sell gas in large quantities to a single consumer at a lower rate per unit than in large quantities to a large number of consumers. While there are no very large consumers of gas in Cedar Rapids, (R. 156), still the plaintiff could increase the consumption by the large consumers of light and power if it were allowed to establish a lower rate for large quantities so as to compete successfully with electricity.

g. It is a well-established principle of business, created by long usage and experience, and is really axiomatic, that a large quantity of gas can be furnished to a single consumer at a less rate per unit than can the same quantity in small amounts to a large number of consumers.

It is lawful and proper to make lower rates to large consumers based on a sliding scale available to all.

Skillman vs. Board, 152 N. Y., 327.
Wagoner vs. Rock Island, 146 Ill., 139.
Brunswick Elec. vs. Maine Water Co., (Me.), 59 Atl., 537.
Robbins vs. Bangor, etc., 1 L. R. A. N. S., 962.
Wilson vs. Tallahassee Water Co., (Fla.), 36 So., 63.

5

SUMMARY OF POINTS UNDER DIVISION A OF THE BRIEF

The points made in this division of the Brief under Assignments of Error Nos. 1 and 2 do not require elaboration. They may be summarized briefly, as follows:

a. While the General Assembly of Iowa has reserve power over corporations and their franchises, it never exercised it in any way applicable to this franchise, and never delegated any part of it to the City of Cedar Rapids, *except only the power to fix rates.*

b. The discount provision of the franchise does not inhere in the rate, but is a separate and distinct right and is valuable, as indisputably established without conflict in the evidence.

c. No substituted method is available or practicable, *but even if it were, the city had no power to compel the adoption thereof in lieu of the discount provision by the plaintiff in error.*

d. Under the reserve power to fix rates in the future, the city possessed no authority whatever to fix such rates so as to impair either the obligations of the contract under which the plaintiff is operating its plant, or so as to deprive the plaintiff of its property without due process of law, and without just compensation.

This franchise was granted when the city was small. On the faith of the franchise, the company invested its capital foregoing substantial dividends thereon for about twenty-five years. It assumed the risk of the future growth of the city and the responsibilities of the development of a hazardous business, and it would be manifestly unjust to allow the city under the guise of fixing rates, to abrogate any essential provision of this contract.

The fixing of the flat rate of 90c is not only in violation of the contract and inhibited by the Constitution, but it is also in violation of all good business principles in two respects:

1st. In not allowing the company to follow the usual custom and charge a rate from which it can make a discount for prompt payment.

2nd. In not allowing the company to meet competition from elec-

tricity and other means of furnishing heat, and light, by offering to large consumers a reduction of price on a sliding scale to all alike, thus legitimately increasing its business.

THERE IS NO CONFLICT IN THE EVIDENCE AS TO THE DISCOUNT PROVISIONS OR ITS VALUE

It is insisted that the right to the benefit of the discount provision is absolutely guaranteed under the provisions of Section 10 of Article I of the Constitution of the United States, and that upon this branch of the case alone, the plaintiff in error is entitled to reversal of the decree of the Supreme Court of Iowa.

DIVISION B

As to the taking of plaintiff's property without just compensation and due process of law in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States

There can be grouped together under this head Assignments of Error, Nos. 21, 22, 23, 24, 25, and 26, which are, as follows:

Assignment No. 21. The court erred in holding that it did not constitute a taking of plaintiff's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

Assignment No. 22. The court erred in not holding that plaintiff is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

Assignment No. 23. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per thousand cubic feet deprives plaintiff of a fair and reasonable return upon its property used in the service of the public.

Assignment No. 24. The court erred in not holding and finding that the ordinance is void, because if enforced it will deprive plaintiff of a fair and reasonable income or any income upon its property used in the public service.

Assignment No. 25. The court erred in not holding and finding that the ordinance fixing the 90c rate in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

Assignment No. 26. The court erred in not finding from the whole of the evidence in the case that 90c per M. c. f. for gas would not enable plaintiff to earn fair and reasonable compensation upon its property. Pages 11 and 12 this Brief.

1.

BASIS UPON WHICH INCOME SHOULD BE CALCULATED

1. The basis of all calculations as to the reasonableness of the rates to be charged by a corporation furnishing gas to the public is the fair value of the property being so used, at the time of fixing the rate.

Wilcox et al, vs. Consolidated Gas Co. of New York, 212 U. S., 19; 53 L. Ed., 383.
Mayor and Ald. City of Knoxville vs. Knoxville Water Co., 212 U. S., 1; 53 L. Ed., 371.
Atlantic Coast Line R. R. Co. vs. Corp. Com., 206 U. S., 1; 51 L. ed., 933.
Stanislaus County vs. Irrigation Co., 192 U. S., 201; 48 L. Ed., 406.
San Diego Land Co. vs. Jasper, 189 U. S., 439; 47 L. Ed., 892, affirming 110 Fed., 702.
Minneapolis & St. Louis Rd. Co. vs. Minnesota, 186 U. S., 257.
Vicksburg Water Co. vs. Vicksburg, 185 U. S., 82; 46 L. ed., 808.
San Diego Land Co. vs. National City, 174 U. S., 739.
Smyth vs. Ames, 169 U. S., 547; 42 L. Ed., 849.
Covington & L. Turnpike Rd. Co. vs. Sandford, 164 U. S., 578; 41 L. Ed., 560.
Cotting vs. Kansas City Stock Yards, 183 U. S., 79; 46 L. ed., 92.
Reagan vs. Farmers L. & T. Co., 154 U. S., 363; 38 L. Ed., 1014.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 574.
Southern Pac. Rd. vs. Rd. Commissioners, 78 Fed., 261.
Memphis Gas & Lt. Co. vs. Memphis, 72 Fed., 952.
Brunswick & T. Water Dist. vs. Maine Water Co., 99 Me., 371; 59 Atl., 537.
Cedar Rapids Water Co. vs. City of Cedar Rapids, 118 Iowa, 234.
Lewis on Eminent Domain, Sec. 462.

2. The value at the time the property is being used, is to be ascertained.

Wilcox et al vs. Consolidated Gas Co. of New York, 212 U. S., 19.
San Diego vs. National City, 174 U. S., 753.
Smyth vs. Ames, 169 U. S., 466; 42 L. Ed., 849.
Lewis on Eminent Domain, Last Ed., 477.
Metropolitan Trust Co. vs. Houston, 90 Fed., 683.
Brunswick & T. Water D. vs. Maine Water Co., 99 Me., 371; 59 Atl, 537.

3. And it is the market value that is to be ascertained and considered, as the fair value of the property.

Lewis on Eminent Domain, Last Ed., 478.
Henry vs. Dubuque & Pac. Ry., 2 Iowa, 300.
Steenerson vs. Great Northern Ry. (Wis.), 72 N. W., 715.
Beale & Wyman R. R. Rate Reg., Sec. 355.

4. The owner of property devoted to a public use is entitled to the

benefit of any appreciation in value above the original cost, and cost of improvements, which is due to good management, or any natural causes.

Wilcox et al vs. Consolidated Gas Co. of New York, 212 U. S., 19; 53 L. Ed., 383.
San Diego Land Co. vs. Jasper, 189 U. S., 439; 47 L. Ed., 892.
San Diego Land Co. vs. National City, 174 U. S., 739.
Detroit vs. Detroit H. and P. Co., 43 Mich., 140; 5 N. W., 275.

5. The value of the plant for which compensation must be made is obviously the fair value for which it might be sold to any other corporation or investor.

Smyth vs. Ames, 169 U. S., (524); 42 L. ed., 849.

6. The question is not what the plant originally cost, or what amount of capital stock it has issued, but what will it cost to reproduce the plant, in its present condition.

San Diego vs. Jasper, 189 U. S., 439; 47 L. Ed., 892.
Ames vs. Union Pacific, 64 Fed., 165.
Beale and Wyman R. R. Rates, Sec. 255.
Steenerson vs. Great Northern Ry., 72 N. W., 715.

7. It is immaterial in what way the property was lawfully acquired, whether by labor, gift or by making profitable use of a franchise previously granted, it is enough if it has become private property.

Monongahela Nav. Co. vs. U. S., 148 U. S., 312; 37 L. Ed., 463.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 574.
Metropolitan Trust Co. vs. Houston, etc., 90 Fed., 683.
Detroit vs. Detroit H. and P. Co., 43 Mich., 140; 5 N. W., 275.
Brunswick Water Dist. vs. Maine Water Co., 59 Atl., 540.

2

GOING VALUE ELIMINATED BY SUPREME COURT OF IOWA

Assignments Nos. 21 to 26 inclusive, and specifically Assignments Nos. 5 and 11, (this Brief pages 8, 9, 11 and 12, R. 665-666) raise, the question here presented.

The following items: Interest on Capital during Construction, $22,415.00, Engineering, $18,679.61, Organization, $14,943.69, or the $100,000 estimated by the witnesses as the going value of the plant, should have been added to the valuation of the physical properties.

The value of "going value" should have been ascertained by the court and added to the physical values. The testimony in regard to these items is set out on pages 45 and 46 of this Brief and need not be here repeated.

Inherent in the going value, is the value of the plaintiff's franchise, or the right to continue its business.

1. Good will or going value should be considered, in arriving at the value of plaintiff's property, upon which it is entitled to earn dividends.

Wilcox, et al vs. Consolidated Gas Co., of New York, 212 U. S., 19; 53 L. Ed., 383.
Monongahela Nav. Co. vs. U. S., 148 U. S., 213; 37 L. ed., 463.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 574.
National Water Works vs. Kansas City, 62 Fed., 853.
Brunswick & T. Water Dist. vs. Maine Water Co., 99 Me., 371; 59 Atl., 537.

2. The plaintiff in its contract with the city assumed certain obligations, and acquired certain rights. In the performance of these obligations, and the exercise of these rights it invested capital and established its business. Has this business a value in addition to its tangible assets? The mere fact that the franchise was granted does not necessarily give it value, but the fact that plaintiff acted on it, invested money, organized and built up a business, gives it value as an established and going concern, in addition to the value of the tangible assets.

People vs. O'Brien, 111 N. Y., 41; 18 N. E., 692; 7 Am. St., 684.

3. The franchise or going value is property, taxable, inheritable, alienable, subject to levy and sale under execution, to condemnation under the exercise of the right of eminent domain, and invested with all the attributes of property generally.

Monongahela Nav. Co. vs. U. S., 148 U. S., 213; 37 L. ed., 463.
People vs. O'Brien, 111 N. Y., 41; 18 N. E., 692.

4. In rate cases, values of property and franchise should be taken into account. The court has recognized that the same principle is involved in rate regulation as in the exercise of the right of eminent domain.

Smyth vs. Ames, 169 U. S., 544; 42 L. Ed., 819.
Reagan vs. Farmers L. & T. Co., 154 U. S., 362, 410.
Ames vs. U. P. Ry. Co., 64 Fed., 165.
San Diego Water Co. vs. San Diego, 118 Cal., 556.

5. The question as to rate of income is, what rate of dividends would induce prudent men to invest in stock of the company representing the real value of the property *as a going business*? Certainly not less than an assured annual income of six per cent.

Wilcox, et al vs. Consolidated Gas Co., of N. Y., 212 U. S., 19; 53 L. Ed., 383.

6. The value of all franchises, rights and privileges should be taken at their value, not to the taker, but to the seller.

Fairbank vs. U. S., 181 U. S., 300; 45 L. ed., 869.

U. S. vs. Gettysburg Elec. R. Co., 160 U. S., 668; 40 L. ed., 576.
Monongahela Nav. Co. vs. U. S., 148 U. S., 236.

7. In fixing the value of the companies' franchises, the appraisers may give such regard as is demanded by ample and fair public policy to the past investment, risks, and services of the companies, and to the reasonably just expectations which those who made the investment had in mind when so investing. The franchises must be valued as living franchises, not as dead or moribund.

Kennebec Wat. Dist. vs. Waterville, 97 Me., 185; 60 L. R. A., 856; 54 Atl., 6.

8. Allowance should be made, in addition to the value as otherwise established, that the gas company is a going concern, with a profitable business already established, and with a present income assured and now being earned.

National Waterworks Co. vs. Kansas City, 62 Fed., 853.
Newburyport Water Co. vs. Newburyport, 168 Mass., 541; 47 N. E., 533.
Gloucester Water Supply Co. vs. Gloucester, 179 Mass., 365; 60 N. E., 977.
Bristol vs. Bristol & W. Water Works, 23 R. I., 274; 49 Atl., 974.

9. If the plaintiff's property were condemned and taken as an entirety the franchise or going value would unquestionably be allowed. Under the present proceedings the owner has no option but to continue to own the property and receive the reduced rates, with the results that if no allowance is made for the going value it would be in a worse position when regulated than when the property is taken outright.

Wilcox, et al vs. Consolidated Gas Co., of New York, 212 U. S., 19; 53 L. ed., 383.
Ames vs. P. R. R. Co., 64 Fed., 178.

10. Speaking of going value, this court said in:

City of Omaha vs. Omaha Water Company, 218 U. S., 180; 54 L. Ed., 991; at page 202 in the original report:

"The option to purchase excluded any value on account of unexpired franchise; but it did not limit the value to the bare bones of the plant, its physical properties, such as its lands, its machinery, its water pipes or settling reservoirs, nor to what it would take to reproduce each of its physical features.

"The value, in equity and justice, must include whatever is contributed by the fact of the connection of the items making a complete and operating plant. The difference between a dead plant and a live one is a real value, and is independent of any franchise to go on, or any mere good will as between such a plant and its customers. That kind of good will, as suggested in *Wilcox vs. Consolidated Gas Co.*, 212 U. S., 19, 53 L. ed., 382, 29 Sup. Ct. Rep., 192, is of little or no commercial value when the business is,

as here, a natural monopoly, with which the customer must deal, whether he will or no. That there is a difference between even the cost of duplication, less depreciation, of the elements making up the water company plant, and the commercial value of the business as a going concern, is evident. Such an allowance was upheld in *National Waterworks Co. vs. Kansas City*, 27 L. R. A., 827, 10 C. C. A., 653, 27 U. S. App., 165, 62 Fed., 853, where the opinion was by Mr. Justice Brewer. We can add nothing to the reasoning of the learned justice, and shall not try to. That case has been approved and followed in *Gloucester Water Supply Co. vs. Gloucester*, 179 Mass., 365, 60 N. E., 977, and *Norwich Gas & Electric Co. vs. Norwich*, 76 Conn., 565, 57 Atl., 746."

11. In *Cedar Rapids Water Co. vs. Cedar Rapids*, 118 Iowa, 234, the court did not allow going value, but in that case it is to be noted, that the franchise had long expired and in view of the fact that the water company had no franchise giving it assurance that it might go on with its business, the Supreme Court did not allow going value, but the court says:

> "The fact that the business is established is, of course, a material fact in ascertaining the value of it,"

which is a recognition of the principle in a proper case. In the instant case, the Supreme Court admitted the justice of allowing going value, but did not allow any, apparently because of the difficulty of ascertaining it.

12. "Going Value" or "Franchise," should not be discarded because of difficulty in ascertaining their amount.

Howe Machine Co. vs. Bryson, 44 Iowa, 166.
Richmond, et al vs. D. & S., 40 Iowa, 272.
Chicago Ry. Co. vs. Tompkins, 176 U. S., 167, at 172; 44 L. ed., 420, where the court says:

> "This difficulty affords no excuse for a failure to examine and solve the questions involved. . . Difficult as are the questions involved in these cases, burdensome as the labor is which they cast upon the Courts, no tribunal can hesitate to respond to the duty of inquiry and protection cast upon it by the Constitution."

13. The franchise is an easement or right of way in the streets, and hence is real property.

Milhau vs. Sharp, 27 N. Y., 620; 84 Am. Dec.,, 314.
People vs. O'Brien, 111 N. Y., 40; 2 L. R. A., 255; 7 Am. St. Rep., 684; 18 N. E., 692.
Ghee vs. Northern Union Gas Co., 158 N. Y., 510; 53 N. E., 692.
People, ex rel. Metropolitan Street R. Co. vs. State Tax Commrs., 174 N. Y., 435; 63 L. R. A., 884; 105 Am. St. Rep., 674; 67 N. E., 69.
Water Comrs. vs. Westchester County Waterworks Co., 176 N. Y., 239; 68 N. E., 348.

Kronsbein vs. Rochester, 76 App. Div., 494; 78 N. Y. Supp., 813.
Re East River Gas Co., 122 App. Div., 890; 106 N. Y., Supp., 1125.
Bowman vs. Wathen, 2 McLean, 376; Fed. Cas. No. 1740.
Detroit Citizens' St. R. Co. vs. Detroit, 26 L. R. A., 667; 12 C. C. A., 365; 22 U. S. App., 570; 64 Fed., 643.
West River Bridge Co. vs. Dix, 6 How., 507; 12 L. ed., 535.
Gue vs. Tide Water Canal Co., 24 How., 257; 16 L. ed., 635.
East Alabama R. Co. vs. Doe, 114 U. S., 340; 29 L. ed., 136; 5 Sup. Ct. Rep., 869.
Chicago vs. Baer, 41 Ill., 306.
Stockton Gas & Electric Co. vs. San Joaquin County, 148 Cal., 313; 5 L. R. A. (N. S.), 174; 83 Pac., 54; 7 A. & E. Ann. Cas., 511.

That a franchise of this kind is real property was decided in England in the early days of gas lighting.

R. vs. Brighton Gaslight & Coke Co., 5 Barn. & C., 466.

14. A corporation cannot be deprived of its franchises except under the power of eminent domain and upon payment of their full value.

Sixth Ave. R. Co. vs. Kerr and Water Comrs. v. Westchester County Waterworks, 176 N. Y., 239; 68 N. E., 348.
Coney Island, Ft. H. & B. R. Co. vs. Kennedy, 15 App. Div., 588; 44 N. Y., Supp., 825.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 574.
Monongahela Nav. Co. vs. United States, 148 U. S., 312; 37 L. ed., 463.

15. The power of the Federal government to regulate commerce, does not authorize it to destroy a franchise of this kind without making just compensation for it.

United States vs. Bellingham Bay Boom Co., 176 U. S., 211; 44 L. ed., 437; 20 Sup. Ct. Rep., 343.
Monongahela Nav. Co. vs. United States, 148 U. S., 312; 37 L. ed., 463.

Plaintiff's franchise is entitled to the same protection as any other property.

Parker vs. Elmira C. & N. R. Co., 165 N. Y., 274; 59 N. E., 81.

16. As the plaintiff in error cannot be deprived of its franchise granted by the city to operate its plant, except under the power of eminent domain and upon payment of value, it certainly cannot be deprived of its franchise indirectly through the exercise of the legislative power regulating rates. The exercise of this power amounts to a taking of private property for public use.

Railroad Cases, 116 U. S., 307-331; 29 L. ed., 636-644.

17. This court has never decided that in fixing a rate, the going value or value of the franchise, or right to be a going concern shall not

be included, but in passing upon rate questions, it has been stated or assumed that the going value is to be included.

Smyth vs. Ames, 169 U. S., 466; 42 L. ed., 819; 18 Sup. Ct. Rep., 418.
Reagan vs. Farmers Loan & T. Co., 154 U. S., 362; 38 L. ed., 1014; 4 Inters. Com. Rep., 560; 14 Sup. Ct. Rep., 1047.
Chicago, M. & St. P. R. Co. vs. Tompkins, 176 U. S., 167; 44 L. ed., 417; 20 Sup. Ct. Rep., 336.
Detroit vs Detroit Citizens St. R. Co., 184 U. S., 368; 46 L. ed., 592; 22 Sup. Ct. Rep., 410.
Ames. vs. Union P. R. Co., 64 Fed., 176.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 574.
San Diego Water Co. vs. San Diego, 118 Cal., 556; 38 L. R. A., 460; 62 Am. St. Rep., 261; 50 Pac., 633.

18. In *Wilcox et al vs. Consolidated Gas Co.*, 212 U. S., 19, this court said:

> *"It cannot be disputed that franchises of this nature are property and cannot be taken or used by others without compensation Monongahela Nav. Co. vs. United States, 148 U. S., 312; 37 L. ed., 463; 13 Sup. Ct. Rep., 622; People vs. O'Brien, 111 N. Y., 1; 2 L. R. A., 255; 7 Am. St. Rep., 684; 18 N. E., 692, and cases cited. The important question is always one of value."*

3

THE "ANNEX" EXCLUDED BY THE SUPREME COURT

Assignments Nos. 21 to 26 inclusive, and specifically Assignments Nos. 6 and 12, (this Brief pages 9 and 10; R. 666) raise the question here presented.

By reference to the facts set out, page 39 of this Brief, it appears without conflict in the evidence that the "Annex" should have been included as a part of the property upon which the plaintiff is entitled to earn a reasonable income.

The evidence is conclusive and uncontradicted, this Brief pages 39 to 41, that the acquisition by the company of the "Annex" was in pursuance of a policy of fair business prudence, considering the character of the business and the necessity of expansion in the near future. In the *Consolidated Gas Case*, 212 U. S., 19, a question of this character arose, and the Master in Chancery found:

> "Ordinary business prudence required the company to anticipate the growth of the company and the requirements of increased business. The company would not, of course, be justified in buying and holding real estate merely because of the fact that it was likely to enhance in value, and irrespective of any necessity therefor in the business of gas making. On the other hand, it seems unreasonable to require that every plot of land owned by the company

should be occupied to its utmost capacity and in constant use in order that such property should be considered as part of the company's gas making investment."

In the instant case, the testimony shows that all of the land owned by the company is occupied to its fullest capacity; that a new holder will be needed in the near future, and that the "Annex" was acquired for the purpose of installing it, and other gas apparatus, and there was not one word of testimony offered by the defendants to show that it was not good business policy to acquire the "Annex," or that it would not soon be needed for the purpose of enlarging the plant, but the value of the "Annex" was merely stricken out by Mr. Hall, the expert accountant for the defendant, for the reason that it was not at the time actually used for the purpose of manufacturing gas.

The testimony shows that the property in the vicinity of the gas works is desirable for railroad purposes (R. 280), and that it is being rapidly bought up, and it would be poor business policy indeed for the company to wait until the moment when it must begin the construction of new apparatus, and then rush into the market and be compelled to pay whatever price might be exacted from its necessities. In fact, if it pursued such a policy, the consumers would have just cause to complain of the company's action and assert that it should not be entitled to earn sufficient to pay dividends upon the exorbitant cost of real estate.

Six per cent on the value of the "Annex," $16,500.00, is $990.00. The taxes are about $185.00. The record shows (page 151) that the rents therefrom were $529.00 for the year 1906, so that about $475.00 per annum is the total net cost of carrying the "Annex" as a part of the plant.

The "Annex" is a proper part of the value of the plant. The plant is not to be a public service property today and something else tomorrow, and the company has a right to look to the future in making its permanent improvements.

San Diego vs. National City, 174 U. S., 740.

4

PAVING OVER MAINS — $53,580.00 EXCLUDED BY THE SUPREME COURT OF IOWA

Assignments Nos. 21 to 26 inclusive, (this Brief, pages 12 and 13). Assignment No. 10 (this Brief, page 10), specifically presents this question.

That this item should have been included in the valuation of the

plant is established without conflict in the evidence (this Brief, pages 47-8).

The action of the Supreme Court in excluding this item (R. 646) was arbitrary and without foundation in the evidence. It is the present value of the plant that should be taken into consideration.

Brunswick & T. Water Dist. vs. Maine Water Co., 59 Atl., 540.
Wilcox et al vs. Cons. Gas Co. of New York, 212 U. S., 19; 53 L. Ed., 382.
Knoxville vs. Knoxville Water Co., 212 U. S., 1.
See also other cases under Div. B 1 of this Brief.

5

STREET MAINS AND HIGH PRESSURE MAINS ELIMINATED BY THE SUPREME COURT OF IOWA

Assignments Nos. 21 to 26 inclusive. Assignments 8 and 9 (this Brief, page 10), specifically present this question.

We have shown (this Brief, page 44) that there is an error as to the high pressure main, and that there should have been added instead of $5,483.00, $11,350.15 therefor, and on page 68 of the Brief, we show where the Supreme Court was in error in eliminating this item, even on the basis of its own finding to the amount of $1,400. In other words, in arriving at the value of plaintiff's property, the Supreme Court fixed the value of the street mains and specials at $119,856, as originally included by Colonel Pratt (this Brief, page 36), while they should have been fixed at $126,349.15, as shown on page 44 this Brief. (Also R. 42-3). This valuation was undisputed and should have been included.

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19.
Also cases cited under Div. B, page 84, this Brief.

6

VALUE OF OLD PURIFIERS ELIMINATED BY THE SUPREME COURT

Assignments Nos. 21 to 26 inclusive. Assignment No. 7 (this Brief, page 9), specifically presents this question.

This item was included in Colonel Pratt's schedule (R. 32 and 35), under the heading "Secondhand material," but was eliminated by the Supreme Court (R. 646). These materials were on hand and a part of the assets of the company, having been replaced by new purifiers in 1905 (R. 166-179). This Brief, page 65.

The Supreme Court not only eliminated the value of the old apparatus taken out, but also the cost of replacement and repairs.

7

WORKING CAPITAL ELIMINATED BY THE SUPREME COURT

Assignments Nos. 21 to 26 inclusive. Assignment No. 4 (page 9 this Brief) specifically presents this question.

Colonel Pratt included as working capital in addition to materials on hand, $25,000. The testimony as regards working capital is set out, pages 44 and 45 of this Brief. This item should have been included. The testimony shows without dispute (R. 435-6) that the company had on hand in the years 1905 and 1906 an average of more than $25,000 in materials and accounts, exclusive of accounts due from consumers. The amount received for gas (Ex. 32, R. 151) per annum is $95,290.00. This would be about $8,000 a month. Therefore, the working capital actually employed was about $33,000, and yet the Supreme Court only allowed $2,500 in addition to materials of about $9,000, shown to be on hand by Mr. Hall. (This Brief, page 45).

Mr. Hall says that the amount due from consumers is a legitimate part of the working capital (R. 344). This being capital employed in the business, should have been included in the valuation.

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19.
And other cases under Div. B, page 84 of this Brief.

8

INCOME FROM THE OPERATION OF THE PLANT

Assignments Nos. 21 to 26, inclusive, and Nos. 13, 14, 15, 16, 17, and 20 specifically (this Brief, pages 11, 12, 13), raise the question here presented.

The elements entering into a fair rate to be charged for gas are:

1. The actual cost of all labor, materials and immediate repairs necessary to manufacture the gas and place it at the disposal of the consumer.

Wilcox et al vs. Consolidated Gas Co. of New York, 212 U. S., 19; 53 L. Ed., 383.
Smyth vs. Ames, 169 U. S., 466.
Reagan vs. Farmers Land T. Co., 154 U. S., 362.
U. P. Ry. vs. U. S., 99 U. S., 700; 25 L. ed., 496.
Southern Pac. Ry. vs. Board of Com., 78 Fed., 265.
Memphis Gas Co. vs. City of Memphis, 72 Fed., 952.
Clyde vs. Richmond Elec., 57 Fed., 436.

2. A reasonable earning on account of depreciation of the plant.

Wilcox et al vs. Consolidated Gas Co. of N. Y., supra.
Mayor and Ald. City of Knoxville vs. Knoxville Water Co., supra.

San Diego Land Co. vs. National City, 174 U. S., 739.
Milwaukee E. R. & L. Co. vs. City, 87 Fed., 577.
Brymer et al vs. Butler Water Co., 179 Pa., 231; 36 L. R. A., 260.

Depreciation is due to three general factors, to-wit:

(a) *Inadequacy.* Where by reason of increased demand the machinery or mains, or some parts of them, become too small.

(b) *Obsolescence.* Where by reason of new invention and advancement in the art, the machinery in use can no longer be economically operated.

(c) *Physical Decay.* Where the apparatus and mains rust or wear out, and have to be renewed.

Mayor and Ald. City of Knoxville vs. Knoxville Water Co., 212 U. S., 1; 53 L. Ed., 371.
U. P. Ry. vs. U. S., 99 U. S., 700; 25 L. ed., 496.
Milwaukee E. R. R. & L. Co. vs. Milwaukee, 87 Fed., 577.
Southern Pac. vs. Board of Com., 78 Fed., 265.

3. No ordinance fixing prices charged for a public service is reasonable which, in addition to the foregoing elements, does not allow to the investors a fair return on the money invested in the enterprise, with due regard to the nature and hazards of the business.

Des Moines vs. Water Works Co., 95 Iowa, 348.
Southern Pac. Rd. Co. vs. Board of Com., 78 Fed., 261.
Cedar Rapids Water Co. vs. City of Cedar Rapids, 118 Iowa, 234.
Brymer et al vs. Butler Water Co., 179 Pa., 231; 36 L. R. A., 260.
San Diego W. Co. vs. City, 118 Cal., 556; 38 L. R. A., 460.

4. The special hazards incident to the business must be taken into consideration in determining the income which the company should receive over and above the fixed charges.

San Diego Water Co. vs. City, 118 Cal., 556; 62 Am. St., 272; 38 L. R. A., 460.
Des Moines vs. Waterworks Co., 95 Iowa, 363.

5. The earlier leaning of the courts toward the doctrine that the legislative power to fix rates stops only at confiscation, has been supplanted by the rule that rates must be reasonable, that is, such as to earn a fair, just, and adequate income on the investment.

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19.
Atlantic Coast Line R. Co. vs. N. Caro. Corp. Comm., 206 U. S., 1; 51 L. Ed., 933.
C. M. & St. P. R. Co. vs. Tompkins, 176 U. S., 167; 44 L. Ed., 417.
San Diego Land Co. vs. National City, 174 U. S., 753-4; 43 L. Ed., 1154.
C. B. & Q. Ry. Co. vs. Chicago, 166 U. S., 226; 41 L. ed., 979.
Covington & L. Turnpike Rd. Co. vs. Sandford, 164 U. S., 578; 41 L. Ed., 560.
Reagan vs. Farmers L. & T. Co., 154 U. S., 362.

Monongahela Nav. Co. vs. U. S., 148 U. S., 312; 37 L. Ed., 463.
C. M. & St. P. Ry. vs. Minn., 134 U. S., 418; 33 L. Ed., 970.
Munn vs. Illinois, 94 U. S., 141; 24 L. Ed., 89.
Railroad Commission Cases, 116 U. S., 307; 29 L. Ed., 636.
Central R. Co. vs. Railroad Commission, 161 Fed., 995.
Southern Pac. vs. Board, 78 Fed., 265.
New Memphis Gas Lt. Co. vs. Memphis, 72 Fed., 952.
Allnutt vs. Inglis, 12 East, 527.
3 *Inters. Com. Rep.*, 209 10 *Sup. Ct. Rep.*, 462, 702.
Ames vs. Railway, 64 Fed., 165.
Des Moines vs. Water Works Co., 95 Iowa, 348.
Cedar Rapids Water Co. vs. Cedar Rapids, 118 Iowa, 234.

6. The rule that the fair return must not be less than the legal rate of interest is justified on reason and authority.

Wilcox vs. Consolidated Gas Co. of N. Y., 212 U. S., 19.
Brymer vs. Butler Water Co., 179 Pa., 251; 36 L. R. A., 260; 36 Atl., 249.
Pennsylvania R. Co. vs. Philadelphia County, 220 Pa., 115; 15 L. R. A. (N. S.), 108; 68 Atl., 676.
Chicago Union Traction Co. vs. State Bd. of Equalization, 114 Fed., 561.
Louisville & N. R. Co. vs. Brown, 123 Fed., 951.
Central R. Co. vs. Railroad Commission, 161 Fed., 925.
Milwaukee Elec. R. & L. Co. vs. Milwaukee., 87 Fed., 585.
Southern P. Co. vs. Railroad Comrs., 78 Fed., 261.
People ex rel, Jamaica Water Supply Co. vs. Tax Comrs., 128 App. Div., 13, 112 N. Y. Supp., 392.
Spring Valley Waterworks vs. San Francisco, 124 Fed., 598.
International Bridge Co. vs. Canada Sou. R. Co., 7 Ont. App. Rep., 226, affirmed in L. R. 8 App. Cas., 723.

7. It is not enough that something is earned for the stockholders. They are entitled to fair compensation.

Smyth vs. Ames, 169 U. S., 534, 547.
Southern Pac. Co. vs. Board, 78 Fed., 236, at 261.
Des Moines vs. Water Works Co., 95 Iowa, 363-4.
Cedar Rapids Water Co. vs. Cedar Rapids, 118 Iowa, 236.

8. To deprive the plaintiff of a fair and reasonable earning capacity, such as the citizen enjoys, as to his money and as to all types of his property, is to deprive it of the equal protection of the laws.

C. M. & St. P. Ry. Co. vs. Minn., 134 U. S., 418; 33 L. ed., 970.

9. The state may be said to have appropriated the gas plant to public use. For the appropriation it is bound to make a just, fair and reasonable compensation.

San Diego Water Co. vs. San Diego, 62 Am. St., 261; 38 L. R. A., 460.

10. The question as to rate of income is what rate of dividends

would induce prudent men to invest in stock of the company representing the real value of the property as a going business.

Wilcox et al vs. Consolidated Gas. Co. of N. Y., 212 U. S., 19; 53 L. Ed., 371.

11. It is proper to apply the prescribed rate to the past experience of the company, taking into consideration the increased cost of operation after the time when the new rate is applied.

Seaboard Air Line Ry. Co. vs. R. R. Com., 155 Fed., 792.

12. Annual income of 4.41 on value of property or 3.30 per cent on stock after deducting fixed charges is unreasonably low.

Spring Valley Water Works Co. vs. San Francisco, 124 Fed., 574.

13. The compensation should be for the real substantial value employed, and no legislation can diminish by one jot the rotund expression of the constitution.

R. R. Cases vs. Henry, 8 Neb., 170.
Spring Valley Water Co. vs. San Francisco, 124 Fed., 574.

14. The power to regulate is not the power to destroy, and limitation is not equivalent to confiscation.

C. M. & St. P. Ry. Co. vs. Minn., 134 U. S., 418; 33 L. ed., 970.
S. Pac. Ry. Co. vs. Bd. of Com., 78 Fed., 236.

15. Whatever the state may do, even with the creation of its own will, it must be in subordination to the inhibition of the Federal Constitution.

Vicksburg vs. Vicksburg Water Works Co., 202 U. S., 453.
Omaha Water Co. vs. City of Omaha, 147 Fed., at 7; 54 L. Ed., 991; 218 U. S., 180.
Railroad Tax Cases, 13 Fed., 754.

16. When just compensation is determined the least infraction of it is confiscation and is a violation of the 14th Amendment to the Constitution of the United States and Sec. 13 of Article I of the Constitution of Iowa, because it is a taking of private property for public use without just compensation.

Spring Valley Water Co. vs. San Francisco, 124 Fed., 574.

17. The plaintiff must have just compensation. Any schedule of rates is forbidden which produces injustice. The quantam of injustice is immaterial. There must be no injustice. Justice must be applied.

> "As it is understood of men, and in its clear light, it was inevitable that it would come to be seen that the 14th Amendment of the Constitution would be a composition of delusive words if it forbade only the taking of physical property, while it permitted the taking of its value — if its guarantees of the law's equal protection to all persons would be satisfied as to railroads by leaving them a

microscopical profit. If so, the pool of Tantalus would lose its force to illustrate the organic law of this great land." — Mr. Justice McKenna in:
Southern Pac. Rd. Co. vs. Commrs., 76 Fed., 261.

9

THE SUPREME COURT ERRED IN REDUCING DEPRECIATION TO 5C PER M. C. F.

Assignments Nos. 21 to 26 inclusive. Assignments Nos. 13 and 17 (this Brief, page 11), specifically present this question.

We have set out in this Brief the testimony in reference to the items of depreciation (pages 59 to 64 this Brief).

A substantial amount should be allowed for depreciation.

Knoxville vs. Knoxville Water Co., 212 U. S., 1-19.
And other cases under Div. B, of this Brief, page 84.

In the case of:

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19, the value of the property was a little more than one hundred times that of the property of the plaintiff in this case, while the amount of gas distributed was approximately one hundred and forty times as much, yet in that case the Master allowed 11c per M. c. f. as depreciation to cover renewals and replacement, and states this to be rather conservative. This finding was approved by the Circuit Court and not disturbed by this court, while in the case at bar, with much smaller sales as compared with the capital invested, the Supreme Court of Iowa allowed only 5c per M. c. f.

In *Union Pacific Ry. Co. vs. United States*, 99 U. S., 700; 25 L. ed., 496, the court says:

> "We think the true interest of the government in this case is the same as that of the stockholders, and will be subserved by encouraging a liberal application of earnings to the improvement of the works."

The laws of the states where public utility commissions have been created provide specifically for depreciation. So also does the Interstate Commerce Commission.

The testimony in this case shows that more than the $65,000 depreciation charged off in five years by the company (R. 153 and 165) (this Brief, page 63) went into renewals and replacements.

In *Milwaukee Elec. Lt. Co. vs. Milwaukee*, 87 Fed., 577, the question of depreciation is discussed at length, and the court says, after referring to deductions made by the expert accountants:

"However valuable this testimony is for analysis of the book-

keeping methods and for corrections of certain charges, it is clearly insufficient without other support to contradict the undisputed testimony both positive and expert on the part of complainant which verifies substantially its contention upon the disputed subjects of deduction, namely, that the expenditures so charged were largely, if not wholly, of such a nature as to justify deduction for maintenance, and that depreciation is a well recognized fact in all such plants, for the allowance must be made to save the capital from impairment without regard to any question of its entry upon the books."

Mr. Averill says (R. 153), and this testimony is nowhere disputed:

"There is a charge for depreciation for 1906 amounting to $13,000. That $13,000 went into the plant, into renewals, repairs, and extensions, and the $10,000 charged off in 1905 went into the plant. It had gone into the plant before it was charged off. These works were built in 1872, re-built in 1883, and again in 1903." (R. 120).

This amount of depreciation was a just charge.

Knoxville vs. Knoxville Water Co., 212 U. S., 1.
San Diego Land Co. vs. National City, 174 U. S., 739.
Brymer et al vs. Butler & Co., 179 Pa., 231; 36 L. R. A., 260.
Southern Pa. Rd. Co. vs. Bd. of Commrs., 78 Fed., 265.

In connection with the items of depreciation, attention is called to the fact that Mr. Hall eliminated from the expense of manufacturing gas the cost of renewal of benches in 1906, amounting to $1,862.76, Record 604, also the $5,627, cost of renewal or repairs of purifiers, from the cost of manufacturing gas for the year 1905. These items should have been included, as they were clearly a part of depreciation, but the Supreme Court, in adopting Mr. Hall's figures as the cost of gas, excluded both of these items. The testimony in regard to these items is on page 65 of this Brief.

10

INTEREST ON BONDS AND LOANS ELIMINATED

The Supreme Court of Iowa erred in refusing to allow as part of operating expenses the items of Interest on Bonds and Interest on Loans. This question is presented by Assignments Nos. 21 to 26 inclusive, and specifically by Assignment No. 15 (this Brief, page 11).

The Supreme Court (Record 652) accepted the cost of gas for 1906 as found by Mr. Hall at 68.12c; Hall's figures (R. 610). Mr. Hall (R. 604) eliminates the interest on bonds and interest on loans and the "Annex" taxes. The company is entitled to earn not only a fair re-

turn upon all the money expended by it in the service, and also on obligations incurred for such loans.

Railroad Com. Cases, 116 U. S., 307; 29 L. Ed., 636.
Chicago G. T. & R. Co. vs. Wellman, 143 U. S., 339; 36 L ed., 176.

"The company has a right to such gross income, from the sale of gas as will entitle it to pay all legitimate operating expenses, pay interest or fixed charges so far as bonds or securities represent an expenditure actually made in good faith."
New Memphis Gas Co. vs. Memphis, 72 Fed., 952.

11

TAXES ON "ANNEX" ELIMINATED BY THE SUPREME COURT

Assignments Nos. 21 to 26 inclusive. Assignment No. 16 specifically presents this question. Page 11 this Brief.

The "Annex" was improperly excluded from the value of the plant, as argued (page 39 this Brief) under Assignments Nos. 6 and 12, and therefore the taxes on the "Annex" should not be excluded from the operating expenses.

12

THE INVESTMENT OF EARNINGS IN THE PLANT

This question is presented by Assignment No. 3. (This Brief, page 9).

In arriving at the very low valuation of $300,000 to $350,000 of the plant of the plaintiff in error, the Supreme Court laid much stress on the fact that the earnings of the plant had been used for the purpose of building it up.

This was perfectly legitimate, especially in view of the fact that for many years no dividends were paid, and those paid were very small, never exceeding 4% on the value of the plant. The fact that earnings were reinvested in the plant, and that it was maintained in a good state of efficiency, is to the credit of the stockholders. The history of this company is one of steady growth and development brought about by the sagacity and prudence of Mr. A. T. Averill, and his son G. M. Averill, who gave their time to the company for almost nothing, and wisely (or unwisely from the result obtained in the Supreme Court of Iowa) reinvested in the plant from year to year the money to which they were justly entitled as salaries and dividends on their investments. This course of conduct of the business on the part of the Averills

should have been the subject of commendation rather than criticism by the Supreme Court of Iowa.

But it is the value of the property at the time of fixing the rate that is to govern.

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19; 53 L. ed., 383.
Mayor & Ald. City of Knoxville vs. Knoxville Water Co., 212 U. S., 1; 53 L. ed., 371.

The owners of the property are entitled to the benefit of any appreciation in value above the original cost and cost of improvements, which is due to good management or any natural causes.

Wilcox et al vs. Consolidated Gas Co. of N. Y., supra.
San Diego Land Co. vs. Jasper, 189 U. S., 439; 47 L. ed., 892.
San Diego Land Co. vs. National City, 174 U. S., 739.
Detroit vs. Detroit H. & P. Co., 42 Mich., 140; 5 N. W., 275.

13

THE SUPREME COURT OF IOWA ASSUMED THE FUTURE EARNINGS OF THE COMPANY WOULD BE LARGELY IN EXCESS OF THE AMOUNT JUSTIFIED BY THE EVIDENCE

This question is presented by Assignment No. 19. (Page 12 this Brief).

The court accepted the figures of Mr. Hall, the accountant, fixing the cost per thousand cubic feet for 1906 at 68.12c, and also accepted Mr. Hall's figures as to the amount of gas manufactured by the company in 1907, the year succeeding the adoption of the ordinance.

It was shown on page 66-7 of this Brief, that Mr. Hall disregarded the fact that there was a fast-station meter and this showed the apparent amount of gas made for the year 1906 as 106,616,340 c. f. Mr. Hall although being advised of the correction of the station meter, refused to adopt such correction and by his own admission (R. 342) if he had used the correct divisor, would have found the cost of gas per M. c. f. to be considerably more than 68.12c; the correct divisor for 1906 being ninety-one million plus instead of one hundred six million plus. This difference in the divisor alone made a difference in the cost of gas of 5c per M. c. f. as applied to the cost of coal, and when all the other items are considered, it made a difference of approximately 15c per M. c. f., so that the court on the indisputable evidence in the case should have found the cost of gas to be over 80c per M. c. f. as fully set forth on pages 70-71 of this Brief. So the Supreme Court manifestly fell into error not only as to the fair value of plaintiff's

property, but also as to the cost per M. c. f. of gas, and in each instance the errors in every detail were against the company.

We have in this case detailed statements of the business transactions of the company for five years preceding the date of the adoption of the 90c ordinance and one year thereafter, and only by arbitrary eliminations of many items from the valuation of the plaintiff's property and the elimination of items properly constituting a part of the cost of gas and erroneous computations, was the Supreme Court able to arrive at a conclusion whereby it was estimated that the plaintiff in error might earn six per cent on the thus diminished valuation of its plant.

14

THE SUPREME COURT IN EFFECT HELD THAT ANY RETURN ON PLAINTIFF'S PROPERTY IS SUFFICIENT

This question is presented by Assignment No. 20. (Page 12 of this Brief).

If the Supreme Court of Iowa had found a fair value of the property of the plaintiff in error, and had arrived at the reasonable and fair cost of the manufacture of gas, the profits of the plaintiff in error would have been "microscopical." This decision does not bear analyses in the light of the facts in the case which are clearly and satisfactorily established. The value of the plaintiff's investment is reasonably $450,000 and the cost of manufacturing and distributing gas is reasonably 80c per thousand cubic feet. The distribution for 1907 was one hundred three million cubic feet. This would leave a net profit of about 2%, and it is submitted that this is a taking of plaintiff's property for a public use without due process of law in violation of the Fourteenth Amendment to the Constitution of the United States.

Wilcox et al vs. Consolidated Gas Co. of N. Y., 212 U. S., 19, and other cases cited under Subhead 5, page 94, this Brief.

15

MR. HALL, EXPERT WITNESS FOR THE DEFENDANT IN ERROR, INCOMPETENT, AND GAVE INCOMPETENT TESTIMONY AS TO DEPRECIATION AND COST OF MANUFACTURING AND DISTRIBUTING GAS

These questions are presented by Assignments Nos. 27, 28, and 29. (Pages 13-14 this Brief).

1. The question as to the competency and legal effect of evidence as bearing upon a question of Federal law is a Federal Question.

Dower vs. Rogers, 151 U. S., 658; 38 L. ed., 305; 17 Mor. Minn. Rep., 704.
Mackay vs. Dillon, 4 How., 421; 11 L. ed., 1038.
Gelston vs. Hoyt, 3 Wheat., 246; 4 L. ed., 381.

The refusal of the state court to consider a federal question which is controlling in a case, is equivalent to a decision against the federal right involved therein.

Des Moines Nav. & R. Co. vs. Iowa Homestead Co., 123 U. S., 552; 31 L. ed., 202.

2. It is not necessary that the express language of the opinion should recite that a federal question has been decided, but it is sufficient for the purpose of the jurisdiction of this court, that the state court by its decisions necessarily adjudicates the defense under the Federal Constitution.

El Paso & N. E. R. Co. vs. Gutierrez, 215 U. S., 90; 54 L. ed., 108; 30 Sup. Ct. Rep., 21.
Wabash R Co. vs. Adelbert College, 208 U. S., 38-44; 52 L. ed., 379; 28 Sup. Ct. Rep., 182.
Atchison, T. & S. F. R. Co. vs. Sowers, 213 U. S., 15; 53 L. ed., 695; 29 Sup. Ct. Rep., 397
San Jose Land & Water Co vs. San Jose Ranch Co., 189 U. S., 179-181; 47 L. ed., 765-769; 23 Sup. Ct. Rep., 487.
Fire Asso. of Philadelphia vs. New York, 119 U. S., 110-120; 30 L. ed., 342-350; 7 Sup. Ct. Rep., 108.
Murdock vs. Memphis, 20 Wall, 590; 22 L. ed., 429.
Mallett vs. North Carolina, 181 U. S., 589-590; 45 L. ed., 1015-16; 21 Sup. Ct. Rep., 740; 15 Am. Crim. Rep., 241.

3. The witness Hall was as shown by his testimony (this Brief page 32; R. 300) an expert accountant, and had had no experience whatever in the gas business, nor did he even pretend to have made a scientific study of the matters of depreciation and cost of the manufacture and distribution of gas. He made up a schedule based in part on data obtained from the books, and in part on figures of his own substituted for those found in the books of the plaintiff in error. (R. 302-5). This testimony and the objections thereto are set out in Assignments Nos. 27, 28 and 29. (Page 13-14 this Brief).

The whole case for the defendants in error rests upon the testimony of this witness, and the assumptions made by him as to the proper valuation of the plaintiff's property and the proper elements including depreciation entering into the cost of the manufacture and distribution of gas.

For illustration, Mr. Hall eliminated certain items from the cost of gas during the 5 years covered by his examination, amounting to about

$15,000 per year, (R. 604), and his whole computation is based for the year 1906 on the amount of gas manufactured, as 106,616,320 c. f. (R. 609) while in fact the amount was 91,173,200 feet. He bases his estimates for the year 1907, on 106,868,498 c. f. while he subsequently makes a correction in his estimate and reduced it to 103,079,190, which was the amount found by the Supreme Court for the year 1907. (R. 648).

Mr. Hall's statement (R. 588) that gas could be supplied to the consumers in Cedar Rapids at a price of 90c per M. c. f., and at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies, was certainly a conclusion and incompetent, and the witness did not show himself competent to make any such statement even if this were a matter for expert testimony. His report (Exhibit K-2) is a very cleverly devised mass of figures and conclusions based in large part on unwarranted eliminations of many important items from the actual cost of the manufacture and distribution of gas as shown by the experience of the company. The Supreme Court of Iowa accepted the figures given by Mr. Hall not only as to the depreciation, but also as to the elimination of many items which entered into the cost of manufacturing gas, and also the elimination of many items from the valuation of the property of the plaintiff in error.

4. This witness was not competent to testify as to:

   a. The cost of manufacturing and distributing gas.
   b. The depreciation of the plant.
   c. The income the plaintiff was entitled to earn upon its property.

Eastern Tran. Co. vs. Hope, 95 U. S., 297; 24 L. ed., 476.
C. M. & St. P. Ry. vs Kellogg, 94 U. S., 469; 24 L. ed., 256.
N. Y. E. L. Co. vs. Blair, 79 Fed., 896.
U. P. Ry. vs. Yates, 79 Fed., 584.
Burg. vs. C. R. I. & P. Ry., 90 Iowa, 114.
Muldowney vs. Illinois Central, 36 Iowa, 473.
Boyle vs. State, 57 Wis., 472; 15 N. W., 827.
Bixby vs. Ry. Co., 105 Iowa, 293.
Dale vs. Johnson, 50 N. H., 452.
M. Pac. vs. Finley, 38 Kan., 550.

5. Opinions are never received if the facts can be ascertained and made intelligible to the jury, or if they are such as men in general are capable of comprehending and understanding. Ordinary affairs of life cannot be the subject of expert testimony.

A. & E. Encyc. of Law, 2nd Ed., Vol. 7, 493.
Graham vs. Penna. Company, 12 L. R. A., 293.

6. Witnesses who acquire their information from scientific books or works on the subject under consideration are not competent to give evidence as experts as to the effects of poison.

Boyle vs. State, 57 Wis., 472; 15 N. W., 827.

7. The governing rule, declares every case permitting the opinion of a witness, is that the subject matter must be one of science or skill, or one which observation or experience has given opportunity and means of knowledge which exist in *reason rather than descriptive facts*, and therefore cannot be intelligently communicated to others not familiar with the subject so as to possess them with the full facts and understanding of it.

N. Y. Elec. Equip. Co. vs. Blair, 79 Fed., 896.

8. If the relation of facts and other probable results can be determined without special skill, the facts themselves must be given in evidence, and the conclusion or inference must be drawn by the jury.

Muldowney vs. Ill. Cent. Rd. Co., 36 Iowa, at page 473.

9. The opinions of insurance agents were held not competent on the question of estimating and calculating the hazards and exposure to fire from one building to another, and the fixing of rates of insurance accordingly, because this is a matter upon which it requires no expert to form an opinion, and the facts should be proved and the jury should form its own opinion on the subject.

C. M. & St. P. Ry. Co. vs. Kellogg, 94 U. S., 469; 24 L. ed., 256.

10. There are branches of business or occupation where some intelligence is requisite for judgment, but opportunities or habits of observation must be combined *with some practical experience.*

Kelley vs. Richardson, 37 N. W., 514.

16

PROFESSOR BEMIS, EXPERT WITNESS FOR THE DEFENDANTS IN ERROR WAS INCOMPETENT, AND GAVE INCOMPETENT TESTIMONY AS TO DEPRECIATION AND THE COST OF MANUFACTURING AND DISTRIBUTING GAS

Assignment No. 30 presents this question. (This Brief page 14).

The authorities cited in the foregoing division of this Brief apply with special force to the testimony of Professor Bemis. He does not even claim to be a gas expert, but an expert on "gas statistical science," (R. 373) whatever that may be. He only claims to know what he has learned from managers and reports.

Assignment No. 30 discloses the utter unreliability of the testimony

of this witness, and his want of knowledge of the subject is demonstrated by the testimony set forth on pages 49 and 50 of this Brief, wherein it is shown that he testified that he examined the gas holder and saw white spots thereon, and claimed they were leaks. Afterwards, the defendants in error called Thomas Suchomal, the superintendent of the works, as a witness, who testified there were no leaks in the holder, and that the white spots were sparrow feathers and bird droppings, and explained satisfactorily how they came to be on the holder.

Mr. Bemis based his testimony upon that of Mr. Hall, and upon facts which constituted sources of his information which are not in evidence and are only hearsay statements of the witnesses as to the facts and statements derived from published reports. The statements of these witnesses that 5c per M. c. f. is sufficient to provide for depreciation to cover renewals, and replacements, is not worthy of credence:

a. Because they are not practical men, and know nothing about the actual conditions and requirements surrounding the manufacture of gas.

b. Because the witnesses based their opinions on hearsay testimony, from which the court might just as well form an opinion as these witnesses.

The entire testimony of these witnesses especially as to depreciation and the cost of the manufacture and distribution of gas is based upon a mass of assumptions and hearsay testimony.

Professor Bemis bases his testimony on the reports of the Massachuetts Commission. These reports were not introduced in evidence, and were not admissible in evidence.

Bixby vs. Railway & Bridge Co., 105 Iowa, 293, where it was decided a doctor on the witness stand might not quote from medical books as a part of his testimony.

2. The truths of exact science to which all intelligent persons assent, and well-established historical facts, may be proven by the writings of competent authors, but beyond this, the rule does not extend. by allowing a contested issue of fact to be established by the unsworn declarations of third persons.

Union Pacific Ry. Co. vs. Yates, 79 Fed., 584.

3. A lawyer who has heard expert testimony and read on the subject, is not competent as a witness as to the Texas fever.

Missouri Pacific vs. Findley, 38 Kansas, 550.

These books and reports were not competent evidence.

Burg vs. C. R. I. & P. Ry. Co., 90 Iowa, 114.

4. The editor of a stock journal, although he has read extensively on the subject, is not allowed to testify as to the disease known as "foot-rot."

Dale vs. Johnson, 50 N. H., 452.

5. This court said in:

Eastern Transportation Co. vs. Hope, 95 U. S., 297; 24. L ed., 477.

"We entertain no doubt but that those who are accustomed to the responsibility of command and whose lives are spent on the ocean are qualified to testify as experts to prove the present effect of cross seas, heavy swells, shifting winds. and sudden squalls."

If Professor Bemis is a competent witness in this case. then any one who has read Dana's "Two Years Before the Mast" is a competent witness as to the "Present effect of cross seas, heavy swells, shifting winds, and sudden squalls."

DIVISION C

This court has jurisdiction of the questions raised under the writ of error

1

THE QUESTIONS INVOLVED IN THIS CASE WERE FULLY PRESENTED TO THE SUPREME COURT OF IOWA

1. Errors were assigned in the Supreme Court of Iowa (R. 659, 660, 661) and raised two federal questions:

1st. That Ordinance No. 752 adopted by the city (R. 9) fixing the rate for gas at 90c per thousand cubic feet, impairs the obligations of the franchise contract (R. 8) under which the plaintiff in error was operating, in that it deprives the plaintiff in error of the benefit of the provision for discount to customers who pay on or before the 10th of each month after consumption, in violation of Section 1 of Article 10 of the Constitution of the United States, as alleged in the petition and exhibits thereto attached (R. 1-10 inclusive).

2nd. That Ordinance No. 752 adopted by the city (R. 9) fixing the rate for gas at 90c per thousand cubic feet, deprives the plaintiff in error of its property without just compensation, and without due process of law in violation of Section 1 of the 14th Amendment to the Constitution of the United States, as alleged in the petition and exhibits thereto attached (R. 1 to 10 inclusive).

2. The petition for the writ of error alleges:

"That the said petition was, upon said trial by said (District) court dismissed, and all relief prayed and asked therein denied,

and judgment and decree entered dismissing the plaintiff's petition with costs, whereupon said plaintiff took an appeal to the Supreme Court of Iowa, that being the highest court of law or equity of the said state in which a decision could be had in said case, and assigned therein as errors that (Here are set out in the printed record in this case, pages 659-660, the errors assigned in the Supreme Court of Iowa, with the exception of the one assigned in reference to the witnesses Hall and Bemis, which was inadverdently omitted. See error 9 p. 104 this Brief.)

It is further alleged in said petition for a writ of error:

"That at the January Term 1909 of the Supreme Court of Iowa, the complaint made by said assignments of error and its accompanying record came on to be heard and was argued in said Supreme Court, which court rendered its final judgment thereon, affirming the judgment of the court below, namely, the District Court of Iowa in and for Linn County."

2

STIPULATION FOR COMPLETION OF THE RECORD IN THIS COURT

The parties by their counsel have entered into a stipulation, which has been filed in this court and printed by the Clerk thereof, that if this court deems the said errors to be an essential part of the said record, the certification of the said record by the Clerk of the Supreme Court of the State of Iowa made after the certification of the original record shall be considered by this court to the same extent and with the same force as though certified by the Clerk of the Supreme Court of the State of Iowa at the time of certifying the original record.

It is also stipulated that Rule 54 of the Supreme Court of Iowa in force at the time of the trial of said cause therein, required that the Brief of appellant contain a short and clear statement disclosing:

1st. The nature of the action.
2nd. What the issues were.
3rd. How the issues were decided, and what the judgment of this court was.
4th. *The errors relied upon for reversal.*
5th. A statement of the facts.
6th. The points with the authorities.

It is also stipulated that the plaintiff in error herein, the appellant in the Supreme Court of Iowa, did serve on the counsel for defendants in error herein, the appellees in the Supreme Court of Iowa, and file in the Supreme Court of Iowa, a Brief and Argument in which the following errors were set forth and relied upon for a reversal:

"ERRORS RELIED UPON FOR REVERSAL

"1. The court erred in holding that if the appellant would

receive, under the 90c ordinance, any compensation for the use of its property the ordinance is valid.

"2. The court erred in holding that it did not constitute a taking of appellant's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

"3. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

"4. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per thousand cubic feet deprives appellant of a fair and reasonable return upon its property used in the service of the public.

"5. The court erred in not holding that the ordinance is void, because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service.

"6. The court erred in not holding that the ordinance fixing the 90c rate in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

"7. The court erred in not holding that the ordinance is a violation of Section 18 of Article One of the Constitution of Iowa, because it is a taking of the private property of the appellant without just compensation.

"8. The court erred in not holding that the ordinance fixing the rate of 90c is a violation of Section 21 of Article One of the Constitution of Iowa, and of Section 10 of Article One of the Constitution of the United States, because said ordinance impairs the obligations of contracts between the appellant and the City of Cedar Rapids.

"9. The court erred in holding that the witnesses for appellee Bemis and Hall, were qualified and competent as experts on the question of the cost of manufacture and distribution of gas.

"10. The court erred in not finding from the whole of the evidence in the case that 90c per M. c. f. for gas would not enable appellant to earn fair and reasonable compensation upon its property.

"11. The court erred in finding that the evidence fails to show that the rate of 90c per M. c. f. for gas fixed by ordinance No. 752 is unjust and unreasonable.

"12. The court erred in finding from the whole of the evidence that the ordinance fixing the 90c rate for gas is not confiscatory in its effect.

"13. The court erred in finding that the rate of 90c per M. c. f. for gas fixed by the ordinance is just and reasonable.

"14. The court erred in holding that the rate ordinance in controversy enabled appellant to earn fair compensation upon its property.

"15. The court erred in dismissing appellant's petition and entering decree and judgment against appellant and in favor of appellees.

"16. The court erred in refusing to hold that the ordinance fixing the rate for gas at 90c per thousand feet was a violation of the Fourteenth Amendment to the Constitution of the United States, because it deprives appellant of its property without due process of law and without just compensation, and denies to appellant the equal protection of the law."

3

ASSIGNMENT OF ERRORS NOT NECESSARY IN SUPREME COURT OF IOWA

Section 4136 of the 1907 Supplement to the Code of Iowa, is as follows:

"Sec. 4136. *Repeal—assignment of errors not required.* That sections four thousand one hundred and thirty-six (4136) and four thousand one hundred and thirty-seven (4137) of the Code be and they are hereby repealed, and in lieu thereof is enacted the following:

" 'No assignment of errors shall be required in any case at law or in equity now pending or hereafter docketed in the Supreme court.' " (30 G. A. C. 126).

Under the statutes repealed by the above act, no assignment of errors was required where the case is tried in equity.

Clearfield Bank vs. Olin, 112 Iowa, 476.

The Supreme Court of Iowa, in the case of

Elias Dale vs. Consolidated Coal Co., 131 Iowa, at page 74,

construes the above section, and also the said Supreme Court Rule 54, as follows:

"We are constrained, also, on the reading of appellee's argument, to call attention to the fact, that since the abolition by the Legislature of the statutory requirement of assignments of error (see Acts 30th General Assembly, chapter 126) there is no occasion to apply the somewhat technical rules which were followed by this court under the statutory requirement of assignments in determining whether errors were sufficiently assigned. Section 54 of our present rules requires no more than that the appellant shall point out the errors relied upon for a reversal, with such definiteness that the appellee and the court may ascertain without searching through the entire abstract or argument, the precise errors relied upon as requiring a reversal, and where it is apparent that neither appellee nor the court has any difficulty in as-

certaining the very points to be decided, we will not give attention to merely technical objections to the sufficiency of the assignments."

The said assignments of error relied upon for reversal, are a part of the record in the Supreme Court of Iowa, because the said Rule 54 of said court requires the same to be served and filed therein.

4

THE PLAINTIFF IN ERROR, HOWEVER, CONTENDS THAT THE QUESTIONS UNDER BOTH CONSTITUTIONAL PROVISIONS WERE NECESSARILY INVOLVED IN THE CASE, AND DECIDED ADVERSELY TO THE PLAINTIFF, AND THAT THEREFORE, IT IS NOT NECESSARY THAT THE RECORD SHOULD SHOW WHAT ERRORS WERE RELIED UPON IN THE SUPREME COURT OF IOWA

a. The 90c rate ordinance abolished the discount provision in the franchise and in so doing, it impaired the obligation of the contract under which the plaintiff in error was operating its gas works and was void as being inhibited by Section 10 of Article I of the Constitution of the United States.

b. If the 90c ordinance fixed the rate for gas so low as not to be compensatory and as to deprive the plaintiff in error of a reasonable income upon its investment in the business, then it was in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

1. The judgment and decree of the Supreme Court of Iowa could not have been given affirming the decision of the District Court of Linn County, Iowa, without deciding both of these questions adversely to the plaintiff in error.

California Power Works vs. Willis E. Davis, Admr., etc., 151 U. S., 389; 38 L. ed., 206.
Armstrong vs. Athens Co., 16 Peters, 281; 10 L. ed., 965.

2. A decision of the federal question in terms is not essential. If a decision of such question was necessarily involved in the judgment rendered, it is not a matter of importance that the state court avoid all reference to the question.

Chapman vs. Goodnow, 123 U. S., 540; 31 L. ed., 235; 8 Sup. Ct. Rep., 211.
Chicago L. Ins. Co. vs. Needles, 113 U. S., 574; 28 L. ed., 1084; 5 Sup. Ct. Rep., 681.
Bell's Gap R. Co. vs. Pennsylvania, 134 U. S., 232; 33 L. ed., 892; 10 Sup. Ct. Rep., 533.

Chicago, B. & Q. R. Co. vs. Chicago, 166 U. S., 226; 41 L. ed., 979; 17 Sup. Ct. Rep., 581.
St. Louis Consol. Coal Co. vs Illinois, 185 U. S., 203; 46 L. ed., 872; 22 Sup. Ct. Rep., 616.

The record in this case not only discloses that the rights of the plaintiff in error under the Constitution were set up and were expressly denied, *but such was the necessary effect in law of the judgment of the Supreme Court of Iowa.*

Appleby vs. City of Buffalo, 221 U. S., 524; 55 L. ed., 838.
Sayward vs. Denny, 158 U. S., 180, 183; 39 L. ed., 941-2; 15 Sup. Ct. Rep., 777.
Harding vs. Illinois, 196 U. S., 78; 49 L. ed., 394; 25 Sup. Ct. Rep., 176.
Waters-Pierce Oil Co. vs. Texas, 212 U. S., 86, 97; 53 L. ed., 417, 424; 29 Sup. Ct. Rep., 220.

5

MOTION OF DEFENDANTS IN ERROR TO DISMISS WRIT OF ERROR

1. The defendants in error have filed a motion to dismiss the writ of error herein upon the ground that no federal question is involved in the case. This court has ordered the motion to be submitted with the case. Counsel for plaintiff in error have filed in this court a resistance to the said motion, and the attention of the court is called thereto, wherein the question of jurisdiction is discussed and the authorities cited on pages 26 to 38 inclusive.

6

QUESTIONS PROPERLY BEFORE THIS COURT

1. The first question is as to whether the obligations of plaintiff's franchise (R. 8) were impaired by the adoption of the 90c ordinance eliminating the discount provision in violation of Section 10 of Article I of the federal constitution.

To determine this question requires no inqury into any disputed question of fact. It being admitted that the franchise was granted and the ordinance fixing the 90c rate was adopted by the city, it is therefore, a question of law as to whether the obligations of the franchise contract are impaired or not.

2. The next question is as to whether the rate fixed for gas by the 90c ordinance is so low as to deprive the plaintiff in error of its property

without just compensation and without due process of law in violation of Section 1 of the 14th Amendment to the Constitution of the United States.

a. On this branch of the case, it is the contention of the plaintiff in error that following the rule announced in the case of

Knoxville vs. Knoxville Water Company, 212 U. S., 1,

the court will inquire into all the facts and try the questions involved *de novo* because "the power (to regulate rates) is best safe-guarded against abuse by preserving to this court complete freedom in dealing with the facts in each case."

b. There is no other method of reviewing the decision of the Supreme Court of Iowa except by writ of error.

Dower vs. Richards, 151 U. S., 658.

c. *Section 709 of the Revised Statutes of the United States*, contains this provision:

> "The writ (of error) shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States."

3. BUT EVEN IF THIS COURT SHOULD HOLD THAT IT WILL NOT INQUIRE INTO DISPUTED QUESTIONS OF FACT AND TRY THE CASE *de novo*, THE QUESTION AS TO THE VIOLATION OF THE PROVISIONS OF THE 14TH AMENDMENT SUFFICIENTLY ARISES ON UNDISPUTED FACTS IN THE CASE:

First. As to the valuation of plaintiff's investment.

It is shown in this Brief, that the following items constituting a part of the investment of the plaintiff in error, in reference to which there is no conflict in the testimony, were entirely eliminated by the Supreme Court of Iowa:

"Annex," (This Brief p. 39 where the testimony in reference thereto is set forth)		$ 16,500.00
Going Value, (This Brief p. 45 to 47, wherein the testimony in reference thereto is set forth)		100,000.00
Or at least the following items should be included as Going Value:		
Interest on Capital during Construction (This Brief p. 46; R. 43)	$22,415.00	
Engineering and Superintendence, (This Brief p. 46; R. 4)	18,679.61	
Organization, securing franchise, legal expenses, etc., (This Brief p. 46; R. 51)	14,943.69	
	$55,938.30	
Paving over Mains (This Brief p. 47, wherein the testimony in reference thereto is set forth		43,580.00

Difference in the value of the High Pressure Pipe made by a mistake of the court (R. 646) Brief 68..	1,380.00
Old Purifiers (R. 32)	1,600.0
	$185,560.00
Add average value as found by the Supreme Court of Iowa (R. 647)	325,000.00
Total value of investment	$510,560.00

Second. That the following items entering into the cost of the manufacture and distribution of gas in reference to which there is no conflict in the testimony, were entirely eliminated by the Supreme Court of Iowa:

Renewal of Benches (1906) (This Brief p. 59 and 65)	$ 1,862.76
Increased Taxes for the year 1907 (This Brief p. 70)	3,392.00
Increased cost of collection by reason of the abrogation of discount provision (This Brief pp. 21 to 24)	4,500.00
Interest on loans, 1906 (This Brief pp. 59 and 64)	866.17
Interest on bonds, 1906 (This Brief pp. 59 and 64)	3,750.00
Total	$14,370.93
Add cost as found by (R. 652) the Supreme Court	70,217.54
Total cost	$84,588.47
The Supreme Court found that the income of the company for 1907 (R. 648) would be	$92,771.10
Deduct the above found cost therefrom	84,588.47
Leaves	$ 8,182.63

as the net profit of the company for the year 1907 instead of $22,553.00 as estimated by the Supreme Court of Iowa, and this is certainly not a reasonable return on the investment.

The above estimates are based on the undisputed testimony, but there are many other items which should enter into the value of plaintiff's investment and into the cost of gas, which have been fully discussed in other parts of this Brief.

The plaintiff in error submits that it is entitled to a reversal of the decree of the Supreme Court of Iowa, because the enforcement of the 90c ordinance would be a violation of its constitutional rights.

Respectfully submitted,

James H. Tuttle

Solicitor for Plaintiff in Error

Office Supreme Court, U. S.
FILED
AUG 4 1909
JAMES H. McKENNEY,
Clerk

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

No. 163

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et. al., 120 N. W. Rep. 966.

Motion to Dismiss Writ of Error or to Affirm

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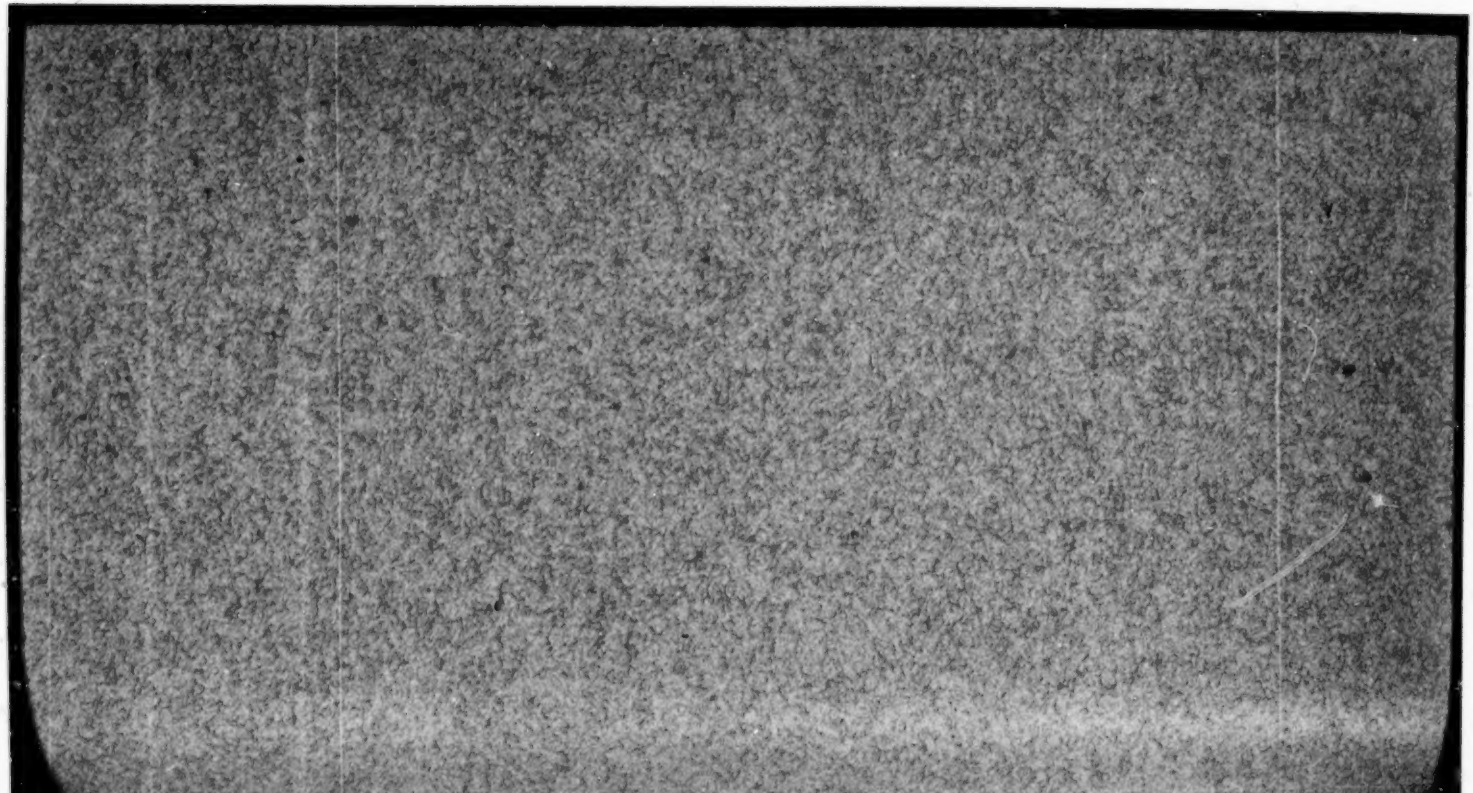
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.



IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et. al., 120 N. W. Rep. 966.

Motion to Dismiss Writ of Error or to Affirm.

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.

Come now the City of Cedar Rapids et al., defendants in error, and move to dismiss the Writ of Error for the want of jurisdiction and submits the following grounds therefor:

1. There is nothing in the pleading nor the record to bring this case within the revising power of this court under Section 709

of the Compiled Statutes of the United States, 1901, as amended by the act of February 18, 1875.

a. No federal question is presented in the pleadings bringing the case within the provisions of Section 709. See page ——— for the pleadings.

b. The record submitted to the supreme court of the State of Iowa, and upon which the opinion of the Supreme Court is grounded, involved no federal question within the provisions of Section 709. See record for opinion of the supreme court and the official report of the opinion, Vol. 120 N. W. R., page 966.

c. No federal question was presented in the pleadings nor in the record presented to the supreme court of the State of Iowa, and necessarily determined by the supreme court of the State of Iowa adverse to the plaintiff in error. See record of opinion in printed copy Vol. 120 N. W. R., p. 966.

d. The allegation in the pleading of the federal question is insufficient to raise or present any federal question for determination to the supreme court of the State of Iowa, and to warrant a review by this court under the revisory powers conferred upon this court under Section 709 of the Compiled Statutes of the United States.

MOTION TO AFFIRM.

1. To affirm because the pretended attempt to plead a federal question is fictitious and colorable and does not involve a real or substantial federal question.

a. In that it appears from the petition of the plaintiff in error that it filed its petition in a court of equity of the State of Iowa praying for an injunction to restrain the City of Cedar Rapids and its municipal council from publishing and attempting to enforce an ordinance fixing the rate which the plaintiff should furnish gas to the City of Cedar Rapids and its inhabitants without continuing the business under the rate so fixed and first ascertaining whether it would be possible to furnish gas at said rate fixed by the ordinance.

b. As shown by the pleading the question thus presented to the district court of Linn County, Iowa, and to the supreme court of the State of Iowa, upon appeal involved only the question of whether the rate thus fixed in the ordinance was so low as to deprive the plaintiff in error of an income sufficient to pay a dividend and thus operated to deprive the plaintiff of its property without compensation.

c. The rate fixed by the ordinance as shown by the plaintiff's petition depended wholly upon a question of fact upon which the plaintiff by its proceeding in the State Court of Iowa invoked judicial inquiry into the facts.

d. It conclusively appears from the petition of the plaintiff in error that it thus had the due process of law provided for by the constitution of Iowa and the Constitution of the United States, and that its rights, if any it has, to question the reasonableness of the ordinance, depended solely upon a question of fact which having been found against it by the Supreme Court of the State of Iowa, such question of fact does not present a federal question within the revisory powers of this court under Section 709 of the Compiled Statutes of the United States, and the attempt to inject into the case a federal question is fictitious and not real.

The pleadings are as follows:

IN THE SUPREME COURT OF IOWA.
ABSTRACT OF RECORD.

On the 24th day of December, 1906, plaintiff filed in the Linn District Court the following:

PETITION IN EQUITY.

PLAINTIFF STATES:

Par. 1. That it is now and was during all the times hereinafter mentioned a corporation for pecuniary profit organized under the laws of the State of Iowa with its principle place of business in Cedar Rapids, Linn County, Iowa, and engaged in furnishing gas for domestic and other purposes to the inhabitants of said city.

Par. 2. That the City of Cedar Rapids is a municipal corporation organized under a special charter from the State of Iowa and operating under said special charter and the laws of Iowa applicable to special charter cities. That the defendant, G. S. Lightner is mayor, and the defendants, C. H. Campbell, W. H. Stepanek, J. H. Hughes, W. G. Rowley, W. W. Post, W. C. Byers, F. W. Barta, D. Feiereisen, J. K. Starman and E. W. Winter are aldermen thereof, and with the mayor constitute the City Council of said City; and that H. S. Keffer is recorder of said city and by virtue of his office clerk of the said council.

Par. 3. That on the 17th day of November, 1871, the said City of Cedar Rapids by its mayor and city council, duly passed, adopted and put in force by publication as required by law a certain ordinance, contract and franchise, the same being Ordinance No. 112, of said City, a copy of which is hereto attached marked "Exhibit A" and made a part hereof. That by said ordinance the said city granted to the plaintiff, its successors and assigns, the privilege of supplying to the said City and the inhabitants thereof gas for domestic, lighting and other purposes. That on the 26th day of May, 1896, the said City of Cedar Rapids, by its council and mayor duly passed and adopted a certain other ordinance and franchise, being Ordinance No. 437, and being an amendment to Exhibit "A" hereof, and by publication put the same in force, a copy of which ordinance is hereto attached marked "Exhibit B" and made a part hereof.

That in due time and as required by said ordinances and each of them, they were duly and properly accepted by the plaintiff and the acceptance duly filed whereby they became valid and binding for the purposes for which they were enacted.

That at the time the said Ordinance No. 112 was enacted there was no law or statute of the State of Iowa prohibiting the council of cities from granting a perpetual franchise to supply the inhabitants with gas or entering into a contract with any person, firm or corporation, fixing the rates that should be charged private consumers, for gas, but the defendant, the City of Cedar Rapids, possessed the right and power, to authorize plaintiff to charge and

collect from each person supplied with gas such rent and rates as might be agreed upon between plaintiff, and the City of Cedar Rapids. That in pursuance of said power, and for the purpose of inducing plaintiff to establish a system of gas works and a suitable gas plant, the said City of Cedar Rapids did in the adoption and enactment of said Ordinance No. 112 passed on the 17th day of November, 1871, confer upon the plaintiff, its successors and assigns, a perpetual franchise, contract and right to occupy the streets of said city and to supply the inhabitants thereof with gas for domestic and other purposes, and did contract and agree, with the plaintiff that it should have the right and authority to charge and collect certain rates, tolls and charges named in and designated by the terms and provisions of said ordinance and franchise. That the said ordinance, franchise and contract and the rights conferred upon plaintiff thereby have never been by plaintiff waived, modified or surrendered, except as to the modification of prices to be charged, accepted and assented to by plaintiff in its acceptance of the terms and provisions of Ordinance No. 437, passed in 1896. That the plaintiff has never in any way waived or surrendered any of the rights and privileges obtained by its original franchise and plaintiff alleges that there is now a valid and subsisting contract by and between the City of Cedar Rapids and the plaintiff whereby the plaintiff is authorized and empowered to charge and collect the following rates, contained in said ordinance, and stated in the following language, to-wit:

"That in consideration of the privilege herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more feet per month the discount shall be 45 cents per thousand feet for all purposes, if paid on the same terms and conditions as above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or for the city offices, the price shall be 10 cents per thousand feet

less than the price paid by individual consumers of said city, such payments to be made monthly in par funds."

And said contract has never been abrogated or cancelled by law or act of the parties.

Par. 4. That in pursuance of the authority conferred upon the plaintiff by the terms of said ordinance and in discharge of the obligations imposed upon it thereby, and relying upon the same as a contract between the parties, the plaintiff built, erected, established, maintained and operated, and still maintains and operates, a system of gas works within the city of Cedar Rapids, expending thereon and therein large sums of money and have from time to time made large additions hereto, and betterments thereof, and has purchased real estate for the location of said plant, and in accordance with the terms and conditions of said ordinance, has been for many years engaged and is still engaged in furnishing gas to large numbers of the residents and citizens of said city and to persons in the vicinity thereof.

Par. 5. That, notwithstanding, the said contract authorizing and empowering the plaintiff to charge and collect rates as in the said ordinances designated, the plaintiff has from time to time reduced the price of gas to private consumers and other persons as fast as the efficiency of the service and the extensions of the plant would warrant and has never received to exceed a fair per cent income from its investment. That the present rates charged by plaintiff, and which have been in force for more than eighteen months last passed are as follows, to-wit: For each one thousand cubic feet of gas consumed $1.25 with a discount to the consumer of ten cents per thousand cubic feet if paid on or before the tenth day of the succeeding month, and the said rates did not pay, during the last fiscal year more than 6 per cent, on the actual value of the investment in said plant, after the operating expenses, renewals and other fixed charges were paid, and will not during the current year pay to the owners of said plant more than a like amount, and a reasonable estimate of the future earnings of the plant for the next three fiscal years, under the present rates, and after meeting the operating expenses and fixed charges, is not to

exceed six (6) per cent on the actual and reasonable value of the capital invested.

That the amount invested by plaintiff in the purchase, building, and construction of its plant is $267,500.00 which amount does not include that part of the gas works used to supply the patrons of plaintiff living in the town of Kenwood Park and the City of Marion.

That the actual appraised value of plaintiff's physical properties in the City of Cedar Rapids is $368,000.00 and this amount does not include any of the plant used for the supplying of the patrons in the town of Kenwood Park or City of Marion, and does not include anything for going value or good will of plaintiff's business nor does it include any sum as a value of plaintiff's franchise. That in addition to plaintiff's physical properties as herein stated it is required to keep invested and in use a working capital of twenty-five thousand dollars, making in all an actual investment of approximately Four Hundred Thousand Dollars, which plaintiff has in use in the service of its patrons in the City of Cedar Rapids and upon which it is entitled to earn dividends after its expenses and fixed charges, are paid.

That plaintiff's gross income for the year 1906, was as follows:

For sale of gas	$ 95,290.94
From all other sources including coke and tar	17,387.58
Making a total income of	$112,678.52

That plaintiff's actual and necessary fixed charges were for the year 1906, as follows:

For manufacture of gas	$61,009.31
Office expenses and salaries	7,795.70
Taxes and interest	6,849.03
Setting of stoves and meters	5,943.83
Repairs and renewals, not extensions	13,000.00
Total expenses	$94,597.87
Leaving a net income of	$18,080.65

That under the rates provided in the ordinance complained of the plaintiff would have been required to furnish gas to its patrons in Cedar Rapids at a reduction of twenty-five cents a thousand feet or .226 per cent of its price for gas at an actual loss to its self and its stockholders for the year 1906, of more than $3,452.10. That for the year 1906 plaintiff had no damgae suits, claims or extra charges to pay, and no court costs or expenses, and for that reason its fixed charges and runing expenses for the year 1906 were lower than can reasonably be expected for the year 1907.

That plaintiff is subject from time to time to large expense in litigation and settlement of damage claims by leakage of gas, and other damages and while the expenses for the year 1906, includes no such items yet plaintiff is constantly subject to such hazards.

Plaintiff further says that coal is the largest item of plaintiff's expense and the price of coal has raised since plaintiff made its contracts for the year 1906, and that the coal for 1907, to be used in the manufacture of gas will cost plaintiff more than ten per cent in advance of the price paid for the year 1906, or more than four thousand dollars above what a like amount of coal cost for said year.

That for the year 1906 plaintiff had large amounts of purifying materials on hand and left over from the prior years and the cost of manufacturing during said year was less, on account of said fact, by many hundred dollars, and plaintiff alleges the facts to be that the cost of manufacturing in the year 1907 a like amount of gas as was manufactured in 1906 will cost plaintiff fully six thousand dollars more than it cost in the year 1906.

Par. 6. Nevertheless, the City of Cedar Rapids by its mayor and by its aldermen constituting its city council, and on the 21st day of December, 1906, attempted to pass and did in form pass a certain ordinance, a copy of which is hereto attached, marked "Exhibit C" and made a part hereof, which ordinance has been signed and approved by the defendant, G. S. Lightner, as mayor of said city, and which by its terms purports to fix the price that the plaintiff shall charge and receive for gas furnished to its consumers for all purposes at Ninety (90) Cents per one thousand

cubic feet and by the terms of which, and by the design and intention of the defendants will go into force and effect on the 1st day of January, 1907, and will by the said defendants be attempted to be enforced as an ordinance of said city, unless defendants be restrained and enjoined from so doing.

Par. 7. That plaintiff further states that said ordinance, passed December 21, 1906, and attempting to reduce the rates to be charged by plaintiff is void and of no effect as against the plaintiff for the following among other reasons:

(a) It proposes and attempts to fix rates at which plaintiff shall be required to furnish gas to its patrons and customers, which rate is a reduction of more than 25 per cent of the present rates charged and received by plaintiff from such patrons and customers, which present rates are fixed by contract between the plaintiff and the defendant, the City of Cedar Rapids, as to gas furnished by plaintiff to such patrons and customers of gas respectively, and which said present rates as fixed by contract are in all cases reasonable and just and not in excess of those named in the ordinance granting to plaintiff its franchise and amendments thereto, and the defendants have no power or authority to pass any ordinance or to put any ordinance in force that will affect in any way the rates established and agreed upon in said contract.

(b) That the said proposed ordinance fixing rates for gas passed December 21, 1906, if put in force and enforced, will at the rates herein specified, work a reduction or more than 25 per cent of plaintiff's gross income and earnings from its patrons and consumers of gas and will cause and require the plaintiff to operate its said plant and works at a loss to its self and to its stockholders and will deprive the plaintiff of a reasonable income, and of any income upon the capital and money invested therein and the said ordinance is unreasonable, unjust, oppressive and ought not to be enforced.

(c) The proposed ordinance passed by the defendant as above set forth, on the 21st day of December, 1906, fixing rates to be charged by plaintiff, is in violation of Section 1, of the Fourteenth Amendment to the Constitution of the United States, in

that, if enforced, it will deprive plaintiff of the equal protection of the law, and of its property without due process of law and without compensation therefor, by depriving plaintiff of earnings sufficient to pay dividends or compensation upon its investment, to its said stockholders or otherwise, as hereinbefore stated and also as hereinafter stated and set forth. and said ordinance passed December 21, 1906, if enforced is in violation of Section 10 of Article 1, of the Constitution of the United States, in that it impairs the obligation of existing contract between plaintiff and defendant, the City of Cedar Rapids, as hereinbefore set forth, and is in violation of Sections 18 and 21 of Article One (1) of the Constitution of the State of Iowa, prohibiting the taking of private property for public use without compensation therefor first being made by due process of law and prohibiting any law or ordinance of any city impairing the obligation of contracts.

Par. 8. That the enforcement of said ordinance attempting to fix rates, and the attempting to put the same in force, will produce great and irreparable injury to the plaintiff and will involve it in a multiplicity of suits and litigation, and greatly harass and injure it in the transaction of its business and affairs, and it is without adequate remedy at law and can only obtain full and adequate relief by and through this equitable suit and proceedings.

Wherefore, plaintiff prays that a temporary writ of injunction may be granted and issued directed to the defendants herein and to their agents, restraining the said defendants and their agents from causing, authorizing or permitting the enforcement of said Ordinance No. 752, passed December 21, 1906, with the name of G. S. Lightner, Mayor, attached, and from passing or publishing any other such ordinance purporting to regulate the rates to be charged by plaintiff, and from in any manner attempting to put such ordinance in force or to enforce the same, either by legal process, writ or otherwise and restraining and enjoining the defendant, H. S. Keffer, as recorder of said city from recording or publishing the same. And that said ordinance passed December 21, 1906, and set out herein as "Exhibit C" be set aside, by decree of this court and declared null and void. That upon final hearing the temporary

injunction above prayed may be made perpetual, and that the plaintiff may have such other, further and different relief as is consistent with equity and good conscience, together with judgment against defendant for the costs of this suit.

JOHN N. HUGHES,
Attorney for Plaintiff.

(Duly verified.)

"EXHIBIT A" OF PETITION IN EQUITY.

AN ORDINANCE TO PROVIDE FOR LIGHTING THE CITY OF CEDAR RAPIDS WITH GAS.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CEDAR RAPIDS:

Sec. 1. That for the purpose of encouraging and promoting the introduction of gas into the city at reasonable rates W. H. Whitta and his associates acting under the name and title of W. H. Whitta & Co., be and are vested with the exclusive privilege for the term of twenty years from the passage of this ordinance of using the streets and alleys of this city and all streets and alleys that may hereafter be added for the purpose of laying down in said streets and alleys, pipes for the conveyance of gas in and through said city, for the use of said city and its inhabitants.

(Sec. 2. Refers to opening of streets and is immaterial to the issues herein.)

Sec. 3. That in consideration of the privileges granted to the company aforesaid, they shall furnish the citizens with gas at a rate not exceeding Five (5) Dollars, per thousand cubic feet, until the consumers shall reach two hundred (200) when the price shall be reduced to four dollars and fifty cents ($4.50) per thousand cubic feet. When the number of consumers shall reach four hundred (400) then the price shall be reduced to a price not exceeding four (4) dollars per thousand cubic feet, and so remain until the expiration of this grant, provided that if any discovery or improvements be made in the preparation of gas from coal or other material, either fluid or solid, by which the cost of making gas will be materially diminished and the same shall be adopted in other principal

cities of the country, then in such case the company aforesaid shall introduce such discovery or improvement in said City of Cedar Rapids, and make such reductions in the price of gas as shall be effected by such discovery or improvement.

(Sec. 4. Refers to street lamps and is immaterial to the issues herein.)

(Sec. 5 Refers to when the plant shall be in operation and is immaterial to the issues herein.)

Secs. 6 and 7 relate to extensions of mains and are immaterial to the issues herein.)

Sec. 8. That it is hereby guaranteed on the part of said city that the said W. H. Whitta & Co., and asigns shall at the expiration of the privilege herein granted, have equal rights and privileges with any other gas company that may be formed in the City of Cedar Rapids.

Passed November 17, 1871.

T. Z. Cook, Mayor.

"EXHIBIT B" OF PETITION IN EQUITY.

ORDINANCE NO. 427.

An Ordinance Granting a Renewal of the Franchise to the Cedar Rapids Gas Light Company, Providing for the Furnishing of Gas to the City of Cedar Rapids, Linn County, Iowa, and the Inhabitants Thereof.

Be It Ordained by the City Council of the City of Cedar Rapids, Iowa:

Sec. 1. That the Cedar Rapids Gas Light Company, a corporation duly organized and acting under the corporate laws of the state of Iowa, be, and the same is hereby vested with the privilege for the term of nineteen years, eleven months and twenty-five days from and after the passage of this ordinance to use the streets, avenues and alleys of said city, and all streets, avenues, and alleys that may be hereafter added thereto, for the purpose of laying down in said streets, avenues and alleys, pipes for the conveyance of gas in and through said city for the use of said city and its inhabitants,

provided always, that said gas pipes, when so laid, shall not in any manner interfere with the drainage of said city, or the necessary construction of sewers or under-ground ways for the conveyance of water,or with any other improvements the city may make upon or in said streets, avenues or alleys.

(Sec. 2 relates to opening streets and is immaterial to the issues herein.)

Sec. 3. That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more cubic feet per month the discount shall be 45 cents per thousand cubic for all purposes, if paid on the same terms and conditions above provided for lighting, such reduction to commence on and after July 1, 1896, and should the city desire the use of gas at any time for public lamps or the city offices the price shall be 10 cents per thousand feet less than the price paid by individual consumers of said city, such payments to be made monthly in par funds.

Sec. 4. That the privileges herein granted in the preceding sections are made upon the condition that said gas company shall at all times, unavoidable accidents only accepted, hold itself in readiness to furnish and shall furnish all gas required by said city and the inhabitants thereof, and shall at all times fully insure, indemnify and save harmless the said City of Cedar Rapids from all loss or damage of any kind which may be sustained by any person by reason of defective, negligent or imperfect closing of all openings made by it in said streets, avenues, or alleys, and shall permanently maintain good, complete and substantial gas works, equal to the best in any city of the same or less population in the State of Iowa, and shall furnish to the city and the inhabitants thereof as good a quality of gas as that furnished by any other gas company in the State of Iowa, and shall at all times conform with, submit to, and carry out any ordinance now in force or that may hereafter be enacted not inconsistent herewith, for regulating or controlling the

use of the streets, avenues and alleys, by said company, and said city shall at all times have the right for a failure on the part of said company to comply substantially with all the provisions of the foregoing sections, to forfeit this franchise and repeal this ordinance.

Sec. 5. It is hereby guaranteed on the part of said city that the said Cedar Rapids Gas Light Company and its successors shall, at the expiration of the franchise herein granted, have equal rights and privileges as to renewal with any other gas company that may be formed in said City of Cedar Rapids during the term of this franchise or at the expiration thereof.

Sec. 7. That, within thirty days after the lawful passage of this ordinance, the Cedar Rapids Gas Light Company shall file with the recorder of Cedar Rapids, Iowa, its written acceptance of the conditions herein set forth, and shall also pay all expenses arising or growing out of the passage of this ordinance and its publication.

Sec. 8. All ordinance or parts of ordinances in conflict with this ordinance are hereby repealed only so far as they affect this ordinance.

Passed May 26, 1896.

(Duly signed and recorded.)

"EXHIBIT C" OF PETITION IN EQUITY.

ORDINANCE NO. 752.

AN ORDINANCE REGULATING THE RATES TO BE CHARGED FOR GAS AND PROVIDING THE PENALTY FOR THE VIOLATION THEREOF.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CEDAR RAPIDS, IOWA:

Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation, shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city.

Sec. 2. Any person, firm or corporation, violating any of the provisions of this ordinance shall, upon conviction thereof, be

punished by fine of not less than Ten Dollars ($10.00) nor more than One Hundred Dollars ($100.00).

Sec. 3. This ordinance shall be effective from and after January 1, 1907.

Sec. 4. All ordinances or parts of ordinances in conflict herewith, are hereby repealed.

Passed this 21st day of December, A. D., 1906.

Attest: G. S. LIGHTNER,

H. S. KEFFER, Recorder. Mayor.

That on the 26th day of April, 1907, the defendants filed in said cause the following:

ANSWER OF DEFENDANTS.

Comes now the defendants, above named, and for answer to plaintiff's petition, they respectfully state:

They admit the allegations contained in Paragraphs One and Two of plaintiff's petition. They admit that on the 17th day of November, 1871, the City Council of the City of Cedar Rapids, duly passed a certain ordinance, being Ordinance No. 112. Admit that Exhibit "A" attached to and made a part of plaintiff's petition is a true copy thereof. They admit that, by the terms of said ordinance, plaintiff, its sucessors and assigns, was granted the privileges of supplying the inhabitants of said city with gas. The defendants admit that the city council of the said city duly passed and adopted a certain other ordinance, being Ordinance No. 437; admit that Exhibit "B" attached to and made a part of plaintiff's petition, is a true copy thereof.

The defendants admit that plaintiff's successors and assigns duly accepted the ordinace passed on the 17th day of November, 1871, and that plaintiff accepted the Ordinance No. 437, passed by said city council on the 26th day of May, 1896. They admit that plaintiff's assignors, after the passage of said Ordinance No. 112, built, erected, established and maintained a gas plant in the City of Cedar Rapids, and that since plaintiff acquired said plant, it has maintained and operated a system of gas works within the City of

Cedar Rapids, and is now engaged in manufacturing and distributing gas as alleged.

Defendant admits that on the 21st day of December, 1906, the City Council of the City of Cedar Rapids passed a certain ordinance, being ordinance No. 752. Admits that the copy attached to plaintiff's petition, marked Exhibit "C" is a true copy thereof and admits that said ordinance became effective January 1, 1907.

And the defendants deny all other allegations contained in said petition. They deny that the franchise granted to the plaintiff granted them a perpetual franchise, and allege that by the terms of said franchise the same expired twenty (20) years after the date of the passage thereof by the city council of said city.

Defendants deny that the ordinance passed on December 21, 1906, reducing the price to be charged for gas, to ninety cents (90c) per thousand cubic feet is unreasonable, and deny that the enforcement of said ordinance would deprive plaintiff of its property without due process of law, and deny that the returns under said ordinance would not yield a fair return on the value of its said plant; and defendants especially deny that the physical property of the plaintiff used in the manufacture and distribution of gas in said city is of the actual valuation of Three Hundred Sixty-Eight Thousand ($368,000.00) Dollars and deny that plaintiffs have more than Four Hundred Thousand ($400,000.00) Dollars actually invested in its said plant.

Further answering said petition, the defendants allege that the ordinance passed by the city council of the City of Cedar Rapids, on December 21, 1906, being No. 752, and fixing the price to be charged for gas within said city, at ninety (90c) cents per thousand cubic feet, is reasonable; that the actual value of the physical property of the plaintiff used in the manufacture and distribution of gas in the City of Cedar Rapids will not, as defendants are informed and believe, exceed Two Hundred Thousand ($200.000.00) Dollars; that the actual cost of manufacturing gas in the holder, in the City of Cedar Rapids, is not to exceed thirty-five (35c) cents per thousand cubic feet; that the actual cost of distributing gas in the City of Cedar Rapids, based upon the present consump-

tion thereof in said city, including maintenance and office expenses, will not exceed twenty (20c) cents per thousand cubic feet; that by intelligent and economical management gas can be produced and distributed in the City of Cedar Rapids by plaintiff's said gas works at ninety (90c) cents per thousand cubic feet and pay a fair return on the actual value of said works in addition to the reasonably and necessary expense of operating, including necessary outlays for maintenance.

WHEREFORE, the defendants pray that plaintiff's petition be dismissed.

JAMES W. GOOD,
JAMISON & SMYTH,
H. E. SPANGLER,
Attorneys for Defendants.

(Duly verified.)

STATEMENT OF FACTS AND BRIEF AND AUTHORITIES.

Section 709 of the Compiled Statutes of the United States as amended by the Act of February 18, 1875, limits the revisory powers of this court over the final judgments and decrees of the highest court of the state to the validity of a treaty or statute of or an authority exercised under the United States when the decision is against their validity, or where is drawn in question the validity of a statute of or an authority exercised under any state on the ground of there being repugnant to the constitution, treaties or laws of the United States, and the decision is in favor of their validity, or where any title, right, privilege or immunity is claimed under the constitution or any treaty or statute of or commission held or authority exercised under the United States and the decision is against the title, right, privilege or immunity especially set up or claimed under said constitution, treaty, statute, commission or authority.

THE FACTS AS ALLEGED IN THE PETITION.

The plaintiff, the Cedar Rapids Gas Light Company, is a corporation, for pecuniary profit, organized under the laws of the State of Iowa, and engaged in manufacturing and furnishing gas for domestic and other purposes to the inhabitants of the City of Cedar Rapids, Linn County, Iowa, under a franchise granted on the 17th day of November, 1871, for a period of 20 years, of the right to occupy the streets, alleys and public places for the purpose of laying down in said streets and alleys, pipes for the conveyance of gas in and through the City for the use of the city and its inhabitants; no rates were fixed in the franchise except a maximum rate. A renewal of the franchise was granted by vote of the City Council on the 26th day of May, 1896, for a period of 19 years 11 months and 25 days from and after the passage of the ordinance, of the right to use the streets, avenues and alleys for the purpose of laying down in said, streets, avenues and alleys, pipes for the conveyance of gas in and through said city for the use of said city and its inhabitants. No rates were fixed by the ordinance except a maximum rate. This action was brought by the plaintiff in error to enjoin an ordinance passed by the City Council of the City of Cedar Rapids, Iowa, on the 21st day of December, 1906, limiting the rate which the plaintiff gas company should charge to 90 cents per 1000 cubic feet and providing a penalty of not less than $10.00 nor more than $100.00 for a violation of the ordinance.

It is also averred the actual value of its physical properties to be $368,000.00 and that at the rate which it was then furnishing gas to consumers, to-wit: $1.25 per 1000 cubic feet, with a discount of 10 cents per thousand cubic feet if paid on or before the 10th day of the month; that its gross income after deducting the necessary expenses for operation, extension and repairs, would work a reduction of more than 25 per cent of its gross earnings and thus deprive the plaintiff of a reasonable income upon its capital and money invested. Wherefore it prayed that a temporary writ of injunction be granted restraining the City of Cedar Rapids and its

municipal council from enforcing the ordinance passed December 21, 1906, and that upon final hearing, the injunction be made permanent and the ordinance be made perpetual and declared null and void.

To this petition in equity the defendant city and its municipal council who were made parties defendant, answered admitting the passing of the ordinance December 21, 1906, and denying that the franchise granted the 17th day of November, 1871, was perpetual and averring that it expired at the expiration of 20 years and denying that the renewal of the franchise by the City Council on the 26th day of May, 1896, was perpetual and denying that the valuation of the plaintiff's physical properties was $368,000.00 and averring that by proper management, gas can be produced and distributed in the City of Cedar Rapids, by the plaintiff's gas works at 90 cents per 1000 cubic feet and pay a fair return and dividend on the investment.

Section 473 of the Code of 1873 limits the authority of a municipal corporation to make any grant or franchise to an individual or corporation for a term of more than 25 years. This limitation upon the power of a municipal corporation to grant a franchise exceeding 25 years was in force under the statutes of Iowa when the renewal of the franchise was granted May 26, 1896.

Under the issues joined as to the reasonableness of the ordinance passed December 21, 1906, evidence was introduced a trial had according to the rules of equity practice as provided by the Statutes of the State of Iowa, and judgment and decree based upon the evidence entered by the district court of Linn County, denying the relief prayed for. Thereupon the plaintiff in error appealed to the Supreme Court of the State of Iowa and under the rules of practice provided by the statutes of the State of Iowa, and enacted by the Supreme Court of the State of Iowa, the case was heard in the supreme court de novo and a finding of the facts was necessarily made and the conclusion and opinion of the supreme court is based on the finding of facts by the supreme court of Iowa, and by reference to the opinion of the supreme court of Iowa, 120 N. W. R. p., 966, it will be noticed that the court found that the ordinance

was not unreasonable and found that the rate fixed by the ordinance the plaintiff in error could earn enough to pay a dividend upon the value of its investment and therefore the ordinance was not unreasonable or unjust and that a compliance with the ordinance would not deprive the plaintiff in error of its property without compensation.

In the Code of 1897, of Iowa, Section 725, the power to require every individual or private corporation operating gas works, as follows:

> "To reasonable rules and regulations to furnish and person applying therefor along the lines of its pipes, mains, or other conduits with gas, water, light or power, and to supply said city or town with water * * * and with gas * * * for necessary public purposes and to regulate them and fix the rent or rate * * * for gas * * * " is conferred upon the municipal council.

No rate having been fixed or provided in the franchise of the plaintiff in error in the ordinance renewing its franchise on May 26, 1896, except the maximum rate, and no ordinance having been passed fixing the rate of gas up to and including December 21, 1906, the municipal council of the City of Cedar Rapids passed the ordinance fixing the rate at 90 cents and this is the ordinance complained of.

See pleadings hereinbefore set out.

JAMES W. JAMISON,
JOHN M. REDMOND,
City Solicitor,
Attorneys for Defendants in Error.

BRIEF AND AUTHORITIES.

THE PLEADINGS PRESENT NO SPECIFIC QUESTION OF FEDERAL JUDISDICTION OR OF PRIVILEGE OR IMMUNITY UNDER THE CONSTITUTION OF THE UNITED STATES.

It will thus be seen that under the issues joined and trial had, that the final judgment and decree of the supreme court of Iowa, was based solely upon a question of fact as found and determined by it upon the evidence in the record.

This brings us to the question of whether the plaintiff in error pleaded any federal question, or any rights, immunity or privilege of federal origin specifically set up in the pleading filed, bringing it within the provisions of Section 709 of the compiled statutes.

In Waters-Pierce Oil Co. vs. State of Texas, 212 U. S., 86, Mr. Justice Day delivering the opinion of the court, said:

> "The jurisdiction of this court to review the proceedings of the state courts, as we have had frequent occasions to declare, is not that of a general reviewing court in error, but is limited to the specific instances of denials of federal rights, whether those pertaining to the constitutionality of Federal or state statutes, or to certain rights, immunities and privileges of Federal origin, specially set up in the state court, and denied by the rulings and judgment of that court. Nor does this court sit to review the findings of facts made in the state court, but accepts the findings of the court of the state upon matters of fact as conclusive, and is confined to a review of questions of federal law within the jurisdiction conferred upon this court."

Evidence in a chancery or equity case cannot be re-examined by the supreme court of the United States on writ of error to a state court but the finding of facts by that court is conclusive.

Quinby vs. Boyd, 128 U. S., 489.

Egan vs. Hart, 165 U. S., 188.

Downer vs. Richards, 151 U. S., 658.

Thayer vs. Spratt, 189 U. S., 346.

Rhodes vs. Iowa, 170 U. S., 412.

Bement & Son vs. Nt. Harrow Co., 186 U. S., 83.

Minn. & St. L. R. C. vs. Minnesota, 193 U. S., 53.

Adams vs. Church, 193 U. S., 510.

ONLY QUESTIONS OF FACT UNDER THE LAW AND THE EQUITY PRACTICE OF THE STATE OF IOWA ARE PRESENTED IN THE PETITION AND THE FINDING OF THE SUPREME COURT OF IOWA IS CONCLUSIVE UPON THIS QUESTION.

Section 1011 of the Compiled Statutes of the United States, page 715 as amended by the Act of February 18, 1875, provides, "There shall be no reversal in the Supreme Court or in a circuit court upon a writ of error for error in ruling any plea in abatement other than a plea to the jurisdiction of the court, or for any error in fact."

In Rhodes vs. Iowa, 170 U. S., 412, this court held that this section applied to a writ of error to a State Supreme Court.

When the plaintiff in error filed its petition in equity in the district court of Linn County, Iowa, challenging the ordinance passed December 21, 1906, as to reducing the price at which the plaintiff in error should charge for gas furnished to the City of Cedar Rapids, and its inhabitants at 90 cents per 1000 cubic feet, and invoking the jurisdiction of the court to inquire into and determine whether such reduction was not so unreasonable as to amount to a confiscation of the plaintiff's property and to deprive

it of all income, the decision of the supreme court of Iowa upon the facts and evidence submitted and upon the issues joined is final and conclusive upon the plaintiff in error in this court.

No contract between the City of Cedar Rapids and the plaintiff company is averred other than such right as the plaintiff acquired and held under its franchise in occupying and using the streets with its mains and pipes for conducting and distributing gas and no right or privilege or immunity under the constitution of the United States or statutes of the United States is averred and no averment that in passing the ordinance and attempting to enforce it, the City of Cedar Rapids was acting under and by authority of any statute of the State of Iowa in conflict with the Constitution of the United States, and no averment that the plaintiff had or held any right or privilege or immunity of any kind or character other than that conferred upon it by the Constitution of the State of Iowa and the Laws of the State of Iowa. The averment of the petition that the plaintiff in error was a corporation organized and existing under the laws of the State of Iowa conclusively established that the only rights and privileges that the plaintiff in error had or possibly could have had was under the Constitution and Statutes of the State of Iowa or the laws of the State of Iowa.

There is no averment in the pleading that either the constitution of the State of Iowa or the laws of the state of Iowa are in any particular repugnant to or in conflict with the constitution of the United States, so that under the facts as alleged, and which are the basis of the plaintiff's cause of action, the right of the plaintiff to challenge the ordinance, passed by the municipal council and to have the courts inquire into the reasonableness of the ordinance and inquire into the facts of whether the rate fixed in the ordinance was so low as to deprive the plaintiff of all profit, was secured to the plaintiff in error under the constitution and laws of the State, hence when it invokes the equity powers of the courts of Iowa upon the facts alleged in its petition and obtained the judgment of the highest court of the State thereon, it had the benefit of due process of law, and it seems to us idle to contend that a federal question could possibly arise, and it appears to us that the pleading of the plaintiff in error conclusively establishes that the

alleged federal question is nothing but a conclusion of the pleader based on no fact and that it did not call in question or put in issue any federal question over which this court can upon this writ of error revise or inquire into.

There is no escaping the proposition that under the facts alleged in the plaintiff's petition, it presented only question within the exclusive jurisdiction of the courts of the State of Iowa, therefore when the decision of a question wholly within the jurisdiction of the State court is sufficient to dispose of the litigation, the supreme court will not examine the federal question even though the federal question is sufficiently pleaded.

McManus vs. O'Sullivan, 91 U. S., 578.

The jurisdiction of the supreme court of the United States to re-examine the final judgments of a State Court under the United States Compiled Statutes, Section 709, cannot arise from mere inference but only from averments so distinct and positive as to place beyond question that the party bringing the case up from such court asserted a federal right.

Mich. Sugar Co. vs. Roscoe D. Dix, 185 U. S., 112.

The mere claim of right under the constitution of the United States in objections filed to the confirmation of a public improvement which was never afterwards brought to the attention of the trial court or the supreme court of the state, is not sufficient to sustain a writ of error from the supreme court of the United States to the State Court.

Hulbert vs. Chicago, 202 U. S., 275.

> "Said act concerning local improvement, passed June 14, 1897, and all amendments thereto are not only contrary to the constitution of Illinois but they are also contrary to the constitution of the United States and to the 14th Amendment thereof * * * Because such act, ordinance, document and orders seek to deprive the objector of property without due process of law. Said ordinances and proceedings are in other respects illegal,

unconstitutional and void. The proceedings herein and said act are contrary to the constitution of the United States and to the 14th amendment thereof because the petitioner herein under and by virtue of said act and of said proceedings seeks to deprive these objectors of their property without due process of law. Said proceedings and said act are also contrary to the constitution of the United States and to the 14th amendment thereof for the reasons set forth in the several foregoing objections."

An exception to the denial of a motion for a new trial on the ground that a state statute violated the 5th amendment of the federal constitution securing due process of law is not equivalent of the claim of the benefit of the due process of law clauses of the 14th amendment.

Chapin vs. Fye, 179 U. S., 127.

In the case above cited the plaintiff after judgment excepted to the denial and his motion for a new trial on the ground among others, that the statute in question was in violation of the 5th and 7th amendments to the constitution and repeated that contention in the assignment of errors in the supreme court adding also that the statute was inconsistent with the ordinance of 1787.

A federal question is not raised by a claim that a state statute was unconstitutional and void, where no provision of the federal as distinguished from the state constitution was pointed out as accomplishing the result, held insufficient to raise a federal question.

New York C. & H. R. R. Co. vs. N. Y., 186 U. S., 269.

In the above case cited it was held that in order to confer jurisdiction upon the United States supreme court under the provisions of Section 709 of the Judiciary Act, it must appear that some provision of the federal as distinguished from the state constitution was relied upon, and such provision must be set forth, where the case was disposed of in the state court on a ground wholly independent of the federal question.

A suit to rescind a contract for exchange of a stock of goods for an invention and letters patent applied for (which was substantially issued) upon the ground of fraudulent representation as to the utility of the invention is a suit arising upon or out of a contract, and a judgment of a state supreme court affirming a decree dismissing the bill, is not reviewable by the federal supreme court, no right under a federal law having been specifically set up and claimed.

Wade vs. Lawder, 165 U. S., 624.

In order to raise a federal question under the provisions of Section 709 of the compiled statutes to confer jurisdiction upon the supreme court to review the case from a state court, the right, title, privilege or immunity claimed must be specially set up.

C. & N. W. Ry. Co. vs. Chicago, 164 U. S., 454.

Telluride P. T. Co. vs. Rio G. & Western Co., 175 U. S., 639.

The averment of the plaintiff's petition "that the proposed ordinance passed by the defendants as above set forth on the 21st day of December, 1906, fixing the rates to be charged by plaintiff is in violation of Section One of the 14th Amendment to the constitution of the United States in that if enforced it will deprive plaintiff of equal protection of law and of its property without due process of law," does not raise any federal question.

PLAINTIFF IN ERROR WAS NOT DENIED THE DUE PROCESS OF LAW GUARANTEED TO IT UNDER THE FEDERAL CONSTITUTION.

Due Process of Law.

Due process of law as defined by the supreme court of Iowa is judicial proceedings according to the courts of the common law. Means that the rights of a person to his life, liberty or property

shall not be denied except by judicial determination after due notice in pursuance of a general law.

Mason vs. Messinger & May, 17 Ia., 261, for precise point see page 267.

Foule & Roper vs. Mann, 53 Ia., 42.

In the last case above cited it is said, no person shall be deprived of life, liberty or property without due process of law. Article 1, Section 9 of the constitution of Iowa. And the same provision is contained in the constitution of the United States.

Due process of law has been variously defined but it undoubtedly means in due course of legal proceedings according to those rules and forms which have been established for the protection of private rights.

The phrase "due process of law" is an equivalent to the phrase "the law of the land." Davidson vs. New Orleans, 96 U. S., 97. In discussing the question, due process of law in the Davidson case the supreme court of the United States said:

> "A most exhaustive judicial inquiry into the meaning of the words 'due process of law' as found in the 5th amendment resulted in the unanimous decision of this court that they do not necessarily imply a regular proceeding in a court of justice or after the manner of such courts."

The question whether a proceeding is due process of law within the meaning of the constitution is independent of the question whether it was by a motion or ordinary action provided the form sanctioned by the state law giving notice affords an opportunity to be heard.

Iowa Cent. Ry Co. vs. State of Iowa, 160 U. S., 389.

The law in its regular course of administration through courts of justice is due process, and when secured by the law of the state, the constitutional requirements are satisfied.

Leeper vs. Texas, 139 U. S., 462.

The due process clause of the 14th amendment to the constitution of the United States does not control mere form of precedure in state courts or regulate the practice therein. All its requirements are complied with, provided, in the proceedings which are claimed not to have been due process of law, the person condemned has had sufficient notice and adequate opportunity afforded him to defend.

Louisville &. N. W. R. Co. vs. Schmidt, 177 U. S., 230.

All that is required to comply with the constitution of the United States (the 14th amendment), as to the due process of law, is that if they constitute a regular course of proceeding in which notice is given of the claim asserted, an opportunity is afforded to defend against it.

Simon vs. Craft, 182 U. S., 427.

Due process of law is afforded in street opening proceedings where ample provision is made for an inquiry as to damages before a competent court to have a review of the proceedings of the court or original jurisdiction on appeal to the highest court of the State.

Pearson vs. Yewdall, 95 U. S., 294.

The adjudication of a persons claims by the courts of his own state is due process of law.

Morley vs. Lake Shore & N. S. R. Co., 146 U. S., 162.

Errors of state courts in interpreting and applying the laws of that state furnish no basis for the claim that there has been a denial of the due process of law guaranteed by the 14th amendment of the constitution.

Howard vs. Ky., 200 U. S., 164.

An erroneous decision of a state court does not deprive the unsuccessful party of his property without process of law, where the parties have been fully heard in the regular course of judicial proceedings.

Central Land Co. vs. Laidley, 159 U. S., 103.

There is no provision in the Federal Constitution prohibiting the state from granting to a tribunal, whether called a court or a board, for final determination of a legal question. Due process of law is not necessarily judicial process nor is the right of appeal essential to due process of law.

Reetz vs. Mich., 188 U. S., 505.

It has been repeatedly held by the supreme court of the United States that a state legislature may limit the amount of charges or rates which individuals or corporations who have devoted their property to a use in which the public have an interest provided that the rates imposed are reasonable.

Cotting vs. Goddard, 183 U. S., 79.

Peik vs. C. & N. W. Ry. Co., 94 U. S., 164.

Munn vs. Illinois, 94 U. S., 113.

Brass vs. N. Dak., 153 U. S., 391.

The supreme court of Iowa has held that the legislature of the State of Iowa may delegate the power to regulate and limit the rates which individuals or corporations may charge for furnishing gas, water and light to the inhabitants of a municipal corporation.

Cedar Rapids Water Co. vs. City of C. R., 118 Ia., 234.

The supreme court of the United States held that the exercise of this right is presumed to have been in the proper exercise of the power conferred.

Mayor & Aldermen of the City of Knoxville vs. Knoxville Water Co., 212 U. S., 1.

There was no allegation in the pleading that any statute of the State of Iowa conferring power upon municipal councils to regulate the price of gas deprived the plaintiff in error of the right to have the rate thus fixed by municipal council reviewed by the courts of the State of Iowa. The supreme court of Iowa has held that an ordinance of a municipal council in pursuance of legislative power

conferred upon it to regulate the price of gas, water or light is subject to review by the courts as to whether the rate thus fixed is reasonable or not.

City of Des Moines vs. Des Moines Water Works Co., 95 Ia., 343.

The statute of the State of Iowa, Code 1897, Section 725, having conferred upon municipal corporations the power to pass ordinances fixing the rates or rents at which gas is to be furnished to the municipality and its inhabitants and the ordinance thus passed in pursuance of the authority conferred upon the City of Cedar Rapids having been assailed in this proceeding in the courts of the State of Iowa upon the grounds that the rates thus fixed in the ordinance are so low as to deprive the plaintiff of a sufficient income after paying operating expenses, to pay any dividend upon its investment, and a trial had, and the question of the reasonableness of the rates thus fixed having undergone judicial investigation under the provisions of the Statutes and Constitution of Iowa, the plaintiff has had the benefit of the *due process of law* and has not been deprived of the benefit of the *due process of law* as provided by the constitution of the United States and the Constitution of the State of Iowa and the laws of the State of Iowa.

It has been held by the supreme court of the United States that the question of whether a rate or rent fixed in pursuance of legislative authority is so low as to operate to deprive a corporation or individual of his property, is a subject of judicial inquiry.

Smyth vs. Ames, 167 U. S., 466.

Now, the plaintiff in error having been secured the right to have a judicial investigation of the rate fixed by the ordinance of the City of Cedar Rapids and its reasonableness passed upon by the courts of the State of Iowa, how can it be said that the plaintiff in error was deprived of the due process of law guaranteed to it under the constitution of the United States and the constitution of the State of Iowa? As a corporation organized and created under the Statutes of the State of Iowa it was a citizen of the State and

its rights subject to the constitution and laws of the State and it could not have resorted to a federal court for the purpose of testing the reasonableness of the ordinance or of any other question averred by it in its pleading.

Therefore it seems to us idle for the plaintiff in error to contend that any federal question is involved or possibly could be involved in the instant case upon which it has the right to have this court pass upon under the provisions of Section 709 of the compiled statutes of the United States.

The plaintiff in error is not entitled to have reviewed in this court the question of whether the supreme court of the State of Iowa in declaring that the rates fixed by the ordinance are reasonable or not arrived at a correct conclusion under the law and the evidence. The finding of the supreme court of Iowa upon the facts being, under repeated decisions of this court upon a writ of error, conclusive upon this court, we cannot conceive of how a federal question can be contained in the pleading or record in the instant case unless this court possesses the power to review and arrive at the conclusion that the supreme court of Iowa was in error in holding that the rate fixed in the ordinance was reasonable as a question of fact.

III.

THE ONLY QUESTION OF FEDERAL JURISDICTION ATTEMPTED TO BE RAISED IS FICTITIOUS AND FRIVILOUS AND COLORABLE ONLY.

As a ground of the motion to dismiss the writ of error or affirm the judgment of the supreme court of Iowa is that the alleged federal question of the plaintiff in error is fictitious and frivilous. On this question it has been repeatedly held by this court that a *real* and not a *fictitious* question is essential to the jurisdiction of the supreme court of the United States over the judgments of State courts.

Hamblin vs. Western Land Co., 147 U. S., 531.

St. L. G. & F. S. Ry. Co. vs. Mo., 156 U. S., 478.

Ill. C. Ry. Co. vs. Chicago, 176 U. S., 646.
Clark vs. McDade, 165 U. S., 168.
Iowa vs. Rood, 187 U. S., 87.

A writ of error from the federal supreme court to a state court, will be dismissed where the federal question relied upon to confer jurisdiction manifestly lacks color of merit.

Wabash R. Co. vs. Flannigan, 192 U. S., 29.

Swafford vs. Templeton, 185 U. S., 487.

New Orleans vs. New Orleans Water Works Co., 142 U. S., 79.

The bare averment of a federal question is not sufficient. There must be at least color of ground for such averment.

Hamblin vs. Western Land Co., 147 U. S., 531.

Something more than a bare assertion that an authority or right is exercised under the United States is essential to the jurisdiction of the court.

Millingar vs. Hartupee, 6 Wall, 258.

There must be a real and substantial dispute as to the effect of construction of the constitution or some law of the United States upon the determination of which the recovery depends in order to make such question a ground of jurisdiction to review the final judgment of a state supreme court.

McCain vs. Des Moines, 174 U. S., 168.

Fair color for claiming that rights under the federal constitution have been violated is necessary to give jurisdiction to review on writ of error any judgment from a state supreme court.

Wilson vs. Nor. Car., 169 U. S., 586.

The federal question must not be a merely abstract or moot one.

Kimball vs. Kimball, 174 U. S., 158.

The claim of right under the federal constitution to prove the truth of certain published articles held to constitute a contempt of court is too clearly unfounded to serve as the basis of a writ of error from the federal supreme court to a state court.

Patterson vs. Colorado, 205 U. S., 454.

IV.

THE PLEADINGS AND FINAL JUDGMENT OF THE SUPREME COURT OF IOWA PRESENT NOTHING BUT A MOOT QUESTION.

As a ground of the motion to dismiss or affirm it is specified that the plaintiff in error having invoked the jurisdiction of a court of equity of the state of Iowa to interfere by injunction and restrain the City and its municipal council from enforcing an ordinance regulating and fixing the price of gas without any effort or attempt upon the part of the gas company to comply with the ordinance or first ascertaining whether gas could be furnished at the rate fixed, is premature and furnished no basis to challange the reasonableness of the ordinance.

A court of equity ought not to interfere by injunction with state legislation fixing the gas rate before a fair trial has been made of continuing the business under such rates where the rates complained of show a very narrow line of division between possible confiscation and proper regulation as based upon the finding as to the value of the property and the division depends upon variant opinions as to value and upon results in the future from operating under such rates.

Consolidated Gas Co. of N. Y. vs. City of N. Y., 212 U. S., 19.

The supreme court of Iowa, in the Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, 120 N. W., 966, after reviewing all of the evidence and arriving at a conclusion as to depriving the

plaintiff of a fair dividend to authorize judicial intereference with the rate thus fixed, said:

> "Should the ordinance after being put in operation and given a fair test be found to deprive plaintiff of a fair return on its investment it ought not to be deprived of the opportunity of again presenting the matter in court. For this reason the petition will be dismissed without prejudice to such action. As so modified, the judgment is affirmed."

We make the point that in view of the fact that it appears from the pleading of the plaintiff in error that it challanged the ordinance fixing the rate at 90 cents as unjust and unreasonable without continuing and in any manner complying with the ordinance or attempting to make any fair test of whether it could furnish gas at the price fixed and in resorting to a court of equity for an injunction that its right to invoke the powers of a court of equity by injunction and before a fair trial was premature, and in view of the further fact that the opinion of the supreme court of the State of Iowa dismissed the petition with the right, after a fair test, to again present its claims to the court, that the plainiff's claim of being deprived of a constitutional right, and its claim of a federal question is fictitious, colorable only, and not real and presents only a moot question, and therefore the judgment should be affirmed for this reason.

For all of the foregoing reasons presented in this motion to dismiss or affirm we submit the Motion to Dismiss should be sustained.

With this motion to dismiss or affirm, the defendants in error, present a motion to advance this cause, if this motion shall be ordered submitted with the case.

Respectfully submitted,

JAMES W. JAMISON,
JOHN M. REDMOND,
City Solicitor,
Attorneys for Defendants in Error.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY, PLAINTIFF IN ERROR

vs.

THE CITY OF CEDAR RAPIDS, ET AL., DEFENDANTS IN ERROR

OCTOBER TERM, 1911

No. 163

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA

Case reported below as Cedar Rapids Gas Light Co. *vs.* The City of Cedar Rapids, et al., 120 N. W. Rep. 966; 144 Ia. 426.

BRIEF FOR DEFENDANTS IN ERROR.

JAMES H. TREWIN,
JOHN N. HUGHES,
Solicitors *For Plaintiff in Error*

JAMES W. JAMISON,
WM. CHAMBERLAIN, City Attorney,
Solicitors *For Defendants in Error*

THE DEFENDANTS IN ERROR HAVE HERETOFORE FILED IN THIS COURT A MOTION TO DISMISS THE WRIT OF ERROR.

This motion was presented to this Court on a motion day with an application to advance the case. The application to advance was denied. The consideration of the Motion to Dismiss was postponed to be submitted with the case. At the time this motion was presented and submitted, the record in this case had not been printed and the motion to dismiss was limited to a consideration of the pleading and the issues therein raised, which pleadings were set out in the motion. As the whole record is now in print before this Court, we renew our motion to dismiss and add thereto additional reasons and points and additional proof in support thereof.

STATUTES AND RULES OF PRACTICE IN THE SUPREME COURT OF IOWA.

Section 4139 of the Code of Iowa, 1907, provides:

> "The parties to an appeal may be heard orally and in writing, subject to such rules as the Court may prescribe; and all causes docketed, not continued by consent or upon cause shown, shall be submitted in the order assigned, unless otherwise directed by the Court or the judges thereof. The Court may reverse, modify or affirm the judgment, decree or order appealed from, or render such as the inferior Courts should have done. No cause is decided until the written decision is filed with the clerk."

Section 58 of the Rules of Practice adopted by the Supreme Court of Iowa is as follows:

> "No cause will be considered as decided until a written decision is filed with the clerk. The decision of the Court on all questions passed upon by it, including motions and points of practice, shall be specifically stated, and shall be accompanied by an opinion upon all such matters as are deemed of sufficient importance, together with any dissent therefrom, which dissent may be stated with or without an opinion; and all decisions and opinions, including dissents, shall be in writing and be filed with the clerk, except rulings on motions, which may be entered upon the announcement book. If the

decision is not accompanied with an opinion, it shall briefly state the title of the case, the county from which the case was appealed, the name of the presiding judge, the nature of the action, the names of counsel appearing on either side, and the conclusions reached."

"No assignment of errors shall be required in any case at law or in equity now pending or hereafter docketed in the Supreme Court."

(*Acts 30 G. A., C. 126.*)

STATUTES OF IOWA RELATING TO THE POWER OF MUNICIPAL CORPORATIONS TO GRANT OR RENEW FRANCHISES AND CONFERRING POWER TO FIX RENTS OR RATES OF PUBLIC SERVICE CORPORATIONS.

When the Code of 1907 was adopted, Section 1090 of the Code of 1873 was incorporated therein without change, amendment or alteration and was the law of the State of Iowa at the time plaintiff in error's franchise was renewed by Ordinance 427 (R-8.)

Section 1619 of the Code of 1907 is as follows:

"The articles of incorporation, by-laws, rules and regulations of corporations hereafter organized under the provisions of this title, or whose organization may be adopted or amended hereunder, shall at all times be subject to legislative control, and may be at any time altered, abridged or set aside by law, and every franchise obtained, used or enjoyed by such corporation may be regulated, withheld, or be subject to conditions imposed upon the enjoyment thereof, whenever the General Assembly shall deem necessary for the public good."

In 1888, Acts 22 G. A. of the State of Iowa, Section 725 of the Code of 1907 was passed conferring additional powers on municipal corporations, which section is as follows:

"They shall have power to require every individual or private corporation operating such works and plants, subject to reasonable rules and regulations, to furnish any person applying therefor, along the line of its pipes, mains, wires, or other conduits, with gas, water, light or power, and to supply said city or town with water for fire protection, and with gas, water, light or power for other necessary public purposes, and to regulate and fix the rent or rate for water, gas, light or power; to regulate and fix the rents or rates of water, gas and

electric light or power; to regulate and fix the charges for water meters, gas meters, electric light or power meters, or other device or means necessary for determining the consumption of water, gas, electric light or power, and these powers shall not be abridged by ordinance, resolution or contract."

Section 720 of the Code of 1907 provides as follows:

"They (municipal corporations) may also grant to individual or private corporations the authority to erect or maintain such works or plants for a term of not more than twenty-five years and may renew and extend the work of such grant; but no exclusive franchise shall be thus granted, extended or renewed."

The sections as above quoted were the only laws of Iowa in effect bearing on the question at the time of the granting to the plaintiff in error of the renewal of its franchise by Ordinance 427 (R-8.)

In accordance with the above statute and rules of practice the opinion of the Supreme Court of the State of Iowa was filed (R. 641 to 654). Final judgment and decree (R. 655 to 657, inclusive.)

ADDITIONAL POINTS AND REASONS WHY THE WRIT OF ERROR SHOULD BE DISMISSED.

1. The only special immunity and privilege set up and claimed by plaintiff in error in the Supreme Court of Iowa under the Constitution and laws of the United States was that the 90c rate ordinance, if put in force, would deprive the plaintiff in error of its property without just compensation and without due process of law and in violation of the Constitution of the United States, the determination of which involved only a question of fact depending upon the evidence to be introduced by the respective parties in the case.

2. The only alleged contract specially set up by the plaintiff in error consisted of the ordinance granting plaintiff a franchise to occupy the streets, avenues, alleys and public places in the City of Cedar Rapids with its pipes for the conveyance of gas in and through the city, which alleged ordinance contained no contract de-

priving the defendant in error from exercising its right and authority to subsequently pass an ordinance regulating the rents and rates which the plaintiff should have the right to charge and receive from its consumers under the provisions of Section 725 of the statutes of the State of Iowa.

3. It affirmatively appears from the ordinance granting the plaintiff in error a franchise that the alleged discount privilege in said ordinance named was not a promise or undertaking upon the part of the City of Cedar Rapids to limit itself that no ordinance would thereafter be passed regulating the rents or rates of gas in Cedar Rapids as provided by Section 725 of the Code.

4. It affirmatively appears from the ordinance granting the plaintiff in error a franchise that the so-called discount privilege named in the said ordinance was an undertaking and promise upon the part of the plaintiff in error.

5. It affirmatively appears from the petition of the plaintiff in error that it had voluntarily waived the so-called discount privilege named in the said ordinance granting a franchise more than two years preceding the time of the adoption of the so-called 90c rate ordinance.

6. The alleged claim of the plaintiff in error that the so-called 90c rate ordinance impairs the obligation of any contract between the plaintiff in error and the defendant in error, in that it deprives the plaintiff in error of the benefit of the so-called discount privilege named in the ordinance granting a franchise, is fictitious, without foundation in fact, and without color of right.

7. No contract in fact is alleged as distinguished from conclusions in the plaintiff's petition which has been impaired by reason of the adoption of the so-called 90c rate ordinance.

8. The alleged contract as contained in the ordinance granting to plaintiff a franchise is *ultra vires*, void and if made was beyond the power and authority of the City of Cedar Rapids to make under the provisions of Section 725 of the statutes of the State of Iowa in force at the time the franchise was renewed and granted and the ordinance adopted.

9. The claimed impairment of the alleged contract named in the ordinance granting to plaintiff in error its franchise if said ordinance does create a contract was and is void and *ultra vires* under Section 725 of the Code, and the claim of impairment, if said ordinance in fact constitutes a contract, presents no federal question conferring jurisdiction upon this Court.

Ordinance No. 427 granting a renewal of the franchise to the Cedar Rapids Gas Light Company is found (R-8).

Section 1 grants to the Cedar Rapids Gas Light Company the privilege for the term of nineteen years, eleven months and twenty-five days from the passage of the ordinance to use the streets, avenues and alleys of said city for the purpose of laying down in said streets, avenues and alleys pipes for the conveyance of gas in and through the city for the use of its inhabitants.

Section 3 contains the promise of the Cedar Rapids Gas Light Company in substance that in consideration of the franchise granted by the first section it shall furnish gas to the inhabitants for a price not to exceed $1.80 per M. c. f. and 20c per M. c. f. discount to consumers who paid on or before the 10th of each month after consumption. The Cedar Rapids Gas Light Company accepted this ordinance May 26th, 1896. (R-9.)

In view of the provisions of Section 725 of the statutes of the State of Iowa and Section 1619 of the statutes of the State of Iowa, hereinbefore quoted, such a provision as contained in the renewal Ordinance No. 427 does not constitute a valid contract.

For cases precisely in point we cite:

> *Knoxville Water Company, plaintiff in error, vs. Mayor and Aldermen of the City of Knoxville, defendants in error,* 189 U. S., 434.

The case came to this Court on a writ of error to the Supreme Court of the State of Tennessee. It was a complaint for a penalty against the Knoxville Water Company for charging and collecting water rates in excess of the rates fixed by the ordinances of the City of Knoxville. The water company pleaded that the ordinances relied on violated the obligation of contracts between the

city and itself, and deprived it of its property and liberty without due process of law, and so was contrary to the Constitution of the United States. The water company was incorporated in Tennessee in 1882 to construct water works in or near Knoxville, with power to contract with the city and inhabitants for the supply of water, and to "charge such prices for the same as may be agreed upon between said company and said parties." This incorporation was under a general act of the legislature, which provides as follows: "And this (act) is in no way to interfere with or impair the police or general powers of the corporate authorities of such city, town, or village, and such corporate authorities shall have power by ordinance to regulate the price of water supplied by such company."

In the same year, 1882, the company made a contract with the city by which it agreed to construct its works and to furnish water, the city gave the company exclusive privileges for thirty years and agreed to make certain payments, etc., and it was mutually agreed, among other things, that after fifteen years the city should have the right to purchase the works at a price to be fixed by appraisers if not agreed upon. The contract contained three distinct parts: First, the promises of the company; next, those of the city; and last, the mutual undertakings. In the first part the company undertook as follows:

> "Said company will supply private consumers with water at a rate not to exceed 5 cents per 100 gallons."

These are the words relied on by the company. They are assumed to contain an implied undertaking on the part of the city not to interfere with the company in establishing rates within the contract limits.

The water company built its works and furnished water. Later, the City of Knoxville passed an ordinance which cut down the rates which the company had been charging and asserts its right to change the rates. Discussing this question, the Court said:

> "The trouble at the bottom of the company's case is, that the supposed contract upon which it is founded does not exist. If such a contract had been intended, it was far too important to be left to implication. In form the words are the words of

> the company alone. They occur in the part of the contract which sets forth the company's undertakings, not in the part devoted to the promises of the city or in that which contains the still later mutual agreements. They are words of a company which was notified by the act which called it into being of the power expressly conferred upon the city 'by ordinance to regulate the price of water' which the company might supply. People who have accepted, as experience shows that people will accept, a charter subject to such liabilities, cannot complain of them or repudiate them, nor can the company which they have formed."

Further discussing the question of whether the language constituted a contract this Court said:

> "Under the present case, it seems to us important to suppose that any power to contract which the city may have had was intended to be exercised in such a way as not to displace the municipal power expressly reserved or given by the general law under which the water company was created. It would require stronger words than those used here to raise a question whether, under the statutes in force, the city could do it if it tried."

In *Georgia R. & Bkg. Co. vs. Smith*, 128 U. S., 174, the franchise or charter gave the company the exclusive right of transportation of persons and property over its railroad so long as it should see fit to exercise the right, providing that the charge of transportation or conveyance should not exceed certain specified rates. "It was held that this was not a contract between the state and the company; that the latter might charge whatever rates they chose within the prescribed limits, but was in effect a provision that if the company should exceed those limits, the exclusive right previously granted might be forfeited." The company was therefore subject to the provisions of subsequent legislation, establishing a commission, regulating railroad tariffs.

BEFORE THE ENACTMENT OF THE PRESENT 90c RATE ORDINANCE, PLAINTIFF IN ERROR HAD WAIVED THE DISCOUNT PRIVILEGE PROVIDED IN SECTION 3, ORDINANCE NO. 427. (R-8.)

We quote from the plaintiff's petition, Paragraph 5, (R-3):

"That notwithstanding the said contract authorizing and empowering the plaintiff to charge and collect rates as in the said ordinance designated, the plaintiff has from time to time reduced the price of gas to private consumers and other persons as fast as the efficiency of the service and the extensions of the plaintiff would warrant and has never received to exceed a fair per cent income upon its investment. That the present rates charged by plaintiff and which have been in force for more than eighteen months last past are as follows, to-wit:

"For each 1 M. c. f. to gas consumers, $1.25, with the discount to the consumer of 10c per M. c. f. if paid on or before the 10th day of the succeeding month. * * *"

From the evidence of Glen F. Averill (R-174) in 1900 the price for gas for illuminating purposes, $1.40; for fuel, $1.25. The net price of $1.25 was from that time on charged for all gas, whether for illuminating or fuel purposes, in quantities of less than 1,000 c. f. That is, the gross bills were $1.40 and the net bills were $1.25. On February 1st, 1905, the gross price was reduced to $1.25 and the net price to $1.15 and the present sliding scale was put into effect.

From the opinion of the Supreme Court of the State of Iowa (R-642):

"In May, 1896, the city council by ordinance extended the company's franchise for a period of a few months less than twenty years with the provision that gas should be furnished at $1.80 per M. c. f. with a discount of 20c to consumers for prompt payment and other dscount for large amounts and to the city.

"The company voluntarily had reduced the price to $1.15 per M. c. f. with 10c additional, in event of failure to make prompt payment, and was selling as low as 90c per M. c. f. to a consumer of large quantities."

From the plaintiff's brief in this Court, page 17, last paragraph:

'The company from time to time prior to the enactment of the 90c ordinance, voluntarily reduced the rate charged for gas, until for the two years preceding the enactment of the 90c ordinance the company was charging $1.25 per M. c. f. for gas with 10c per M. c. f. discount if paid for on or before the 10th of the month succeeding the consumption."

THE SUPREME COURT OF THE UNITED STATES WILL DETERMINE FOR ITSELF WHETHER THE RECORD PRESENTS A FEDERAL QUESTION, CONFERRING JURISDICTION OF THIS COURT TO REVIEW THE OPINION OF THE SUPREME COURT OF A STATE ON WRIT OF ERROR.

The existence or non-existence of a contract, the obligation of which is alleged to have been impaired by state enactment, will be determined by the Supreme Court of the United States for itself on writ of error to a state court.

Chicago, B. & Q. R. Co. vs. Nebr., ex rel, 170 U. S. 57.

The determination of the existence or non-existence of a contract set up as well as the question of its impairment by state statute is within the paramount authority of the Supreme Court of the United States when reviewing the final judgment of a state court respecting an enactment alleged to violate the contract clause of the Constitution.

Douglas vs. Kentucky, 168 U. S., 488.

Whether a right or privilege claimed under the Constitution of the laws of the United States was distinctly and sufficiently pleaded and brought to the notice of the state court is itself a Federal question in the decision of which the Supreme Court of the United States on writ of error is not concluded by the view taken by the highest state court.

Covington & L. Turnpike Road Co. vs. Sandford, 164 U. S., 578.

NO FEDERAL QUESTION IS RAISED BY THE CONTENTION THAT THE 90c ORDINANCE IMPAIRS THE DISCOUNT PROVISION OF PLAINTIFF IN ERROR'S ORDINANCE 427 AND THUS IMPAIRS THE OBLIGATION OF THE CONTRACT.

For a line of cases in point, we cite:

Central Land Co. of West Virginia vs. Laidley, 159 U. S., 103.

Weber vs. Rogan, 188 U. S., 10.
Tampa Water Works Co. vs. City of Tampa, 199 U. S., 241.

In *Central Land Company of West Virginia vs. Laidley, supra,* was a writ of error to the Supreme Court of Appeals of the State of West Virginia. The ground relied on for invoking appellate jurisdiction of this Court was in substance as follows:

That by the decision of the Supreme Court of Appeals of West Virginia, without any legislative action the obligation of the contract contained in the deed from Mr. and Mrs. Pennypacker to Huntington, the grantor or the plaintiff in error has been impaired and the plaintiff in error has been deprived of its property without due process of law. In discussing this question, Mr. Justice GRAY said:

> "In order to come within the provision of the Constitution of the United States which declares that no state shall pass any law impairing the obligation of contract; not only must the obligation of a contract have been impaired, but it must have been impaired by some act of the legislative power of the state and not by a decision of its judicial department only."

The appellate jurisdiction of this Court, upon writ of error to a state court, on the ground that the obligation of a contract has been impaired, can be invoked only when an act of the legislature alleged to be repugnant to the Constitution of the United States has been decided by the state court to be valid, and not when an act admitted to be valid has been misconstrued by the Court. The statute of West Virginia is admitted to have been valid, whether it did or did not apply to the deed in question; and it necessarily follows that the question submitted to and decided by the state court was one of construction only, and not of validity. If this Court were to assume jurisdiction of this case, the question submitted for its decision would be, not whether the statute was repugnant to the Constitution of the United States, but whether the highest Court of the state has erred in its construction of the statute. As was said by this Court, speaking by Mr. Justice Grier in such a case, as long ago as 1847: "It is the peculiar province and privilege of the state courts to construe their own statutes; and it is no part of the func-

tions of this Court to review their decisions, or assume jurisdiction over them on the pretense that their judgments have impaired the obligation of contracts. The power delegated to us is for the restraint of unconstitutional legislation by the states, and not for the correction of alleged errors committed by their judiciary."

In *Tampa Water Works Co. vs. Tampa*, 199 U. S., 241, was a writ of error to the Supreme Court of the State of Florida. The bill alleged a contract between the plaintiff water company and the City of Tampa by which the former was to erect water works and have the right to charge certain rates for the use of its water for thirty years with various other terms, not necessary to mention.

By subsequent ordinance the city fixed lower rates as the highest to be charged by any person or corporation furnishing water to the city or its inhabitants and imposed a penalty for violation of the ordinance. The bill sets up that this ordinance impairs the obligation of the plaintiff's contract and takes its property without due process of law, contrary to the Constitution of the United States. The city ———————— under Section 30, Art. 16 of the state Constitution in force when the contract was made and under an act of the legislature approved May 31, 1901.

The clause of the state Constitution is as follows:

> "The legislature is invested with full power to pass laws for the correction of abuses and to prevent unjust discrimination and excessive charges by persons and corporations engaged as common carriers in transporting persons and property or performing other services of a public nature, and shall provide for enforcing such laws by adequate penalties or forfeitures."

In pursuance of this clause of the Constitution, the legislature passed an act by which the corporate authorities of cities, towns and villages were empowered to prescribe by ordinance charges for water, such charges to be just and reasonable. This act was construed by the Supreme Court of Florida to mean that cities might establish reasonable maximum rates, if in any case they could do so without impairing the obligation of contracts.

This Court held the decision of a state court, construing a state statute so as to remove any question of its repugnancy to the

Federal, cannot be reviewed by the Supreme court of the United States on writ of error to the state court.

A provision of a state Constitution giving the legislature full power to correct abuse and prevent any unjust discrimination and excessive charge is self-executing to the extent that contracts made after it went into effect are subject to the possibility of the exercise of such power.

The decision of a state court that a municipality could not by a contract with a water company deprive itself of a right to establish reasonable maximum rates conforming to a state statute adopted to carry into effect the provision of the state Constitution in force when the contract was made, which invested the legislature with full power to pass laws correcting abuses and preventing excessive charges by persons and corporations engaged as common carriers in transporting persons and property or performing other services of a public nature and declarations that the legislature shall provide for enforcing such laws by adequate penalties or forfeitures, is not so clearly erroneous as should require reversal on a writ of error from the Supreme Court of the United States.

The alleged contract, if any there was, is void on its face, because at the time of the renewal of the plaintiff's franchise under Ordinance No. 427 (R-8) Section 1619 of the Code was in force, providing "that any organization or corporation shall at all times be subject to legislative control and may be at any time altered, abridged or set aside by law," and Section 725 of the Code of Iowa was in force which conferred authority upon municipalities to require every corporation operating gas plants to furnish gas to the inhabitants and to regulate and fix the rent or rate for gas, and said section further provides, "and these powers shall not be abridged by ordinance, resolution or contract." Therefore, when plaintiff in error accepted of the renewal of its franchise under Ordinance No. 427 it was with full knowledge of the provisions of Section 725 and Section 1619 of the statutes of Iowa. Should this Court hold that Ordinance No. 427 (R-8) amounted to a contract securing to plaintiff the benefit of the discount clause, and that Ordinance No. 725 (R-9, top 10) deprived plaintiff of the benefit

thereof, it would be required to also hold that in view of the provisions of Section 725 of the Code of Iowa that the contract was *ultra vires* and not within the power of the City of Cedar Rapids to make, and hence could not be enforced. If it could not be enforced it necessarily follows that its assertion in the petition and in argument would not present a Federal question conferring jurisdiction on this Court in this case.

In *City of New Orleans vs. New Orleans Water Works Co. et al.*, 142 U. S., 79, it was held:

> "That the Supreme Court of the United States would not entertain jurisdiction of appeal from the decision of the State Supreme Court on the ground that it upheld a statute which by changing the terms of a contract between a city and the water works company impaired the obligation thereof within the prohibition of the Federal Constitution when it appears that the contract claimed to have been impaired was *ultra vires* and void and had been so declared by the State Supreme Court. The contract being void, it had no legal existence and could not be impaired."

THE IMMUNITY OR PRIVILEGE AND THE ONLY IMMUNITY OR PRIVILEGE SPECIALLY SET UP BY THE PLAINTIFF AS SHOWN BY THE RECORD IS FOUND IN PARAGRAPH 7 OF THE PLAINTIFF'S PETITION (R-5 & 6), ASSIGNMENT OF ERROR 25 (R-668), PLAINTIFF'S BRIEF, DIV. B (P. 83), DIV. C (P. 106). ITS SOLUTION DEPENDS UPON THE EVIDENCE.

This evidence cannot be re-examined by the Supreme Court of the United States on a writ of error to the state Supreme Court of Iowa, but the finding of facts by that Court is conclusive.

Quinby vs. Boyd, 128 U. S., 489.
Egan vs. Hart, 165 U. S., 188.
Downer vs. Richards, 151 U. S., 658.
Thayer vs. Spratt, 189 U. S., 346.
Rhodes vs. Iowa, 170 U. S., 412.
Bement & Son vs. Nt. Harrow Co., 186 U. S., 83.
Minn. & St. L. R. C. vs. Minnesota, 193 U. S., 53.
Adams vs. Church, 193 U. S., 510.
Chapman & The Land Co. vs. Biglow, 206 U. S., 41.

If it be conceded by the defendant in error that the immunity and privilege thus claimed was sufficiently pleaded and raised and presented to the Supreme Court of the State of Iowa, it does not follow that the plaintiff in error is entitled to have reviewed and considered a finding made by this Court on the evidence. For this Court to do so, should it arrive at a different conclusion from that arrived at after a review of the evidence by the Supreme Court of the State of Iowa, would be nothing more or less than a review by this Court of an error of the Supreme Court of the State of Iowa as to its finding of facts, for it must be conceded that if the finding of facts arrived at by the Supreme Court of the State of Iowa after a review and consideration of all of the evidence that the enforcement of the 90c rate ordinance would not deprive the plaintiff of a reasonable income upon its investment and property at the rate fixed by the ordinance of 90c, it necessarily follows that the conclusions of law of the Supreme Court in denying to plaintiff the relief asked was a correct conclusion of law.

As we understand it, where the Federal question presented by the pleadings depends for its solution upon the finding of a question of fact, this Court on a writ of error to a state Court is bound by the finding of facts as made by the Supreme Court of the State of Iowa. Assuming that this Court will accept of the conclusions of the Supreme Court of the State of Iowa as to the facts found by it from the evidence, the Federal question of immunity or privilege thus raised and presented is not the subject of review, and does not present a Federal question so as to invoke the jurisdiction of this Court on a writ of error as provided in Section 709 of the revised statutes of the United States, but that in order for this Court to review a Federal question thus raised it must be made to affirmatively appear from the record that the immunity or privilege set up and claimed must have been passed upon by the Supreme Court of the State of Iowa and the immunity or privilege denied by that Court as a matter of law and not denied because of a finding of facts.

Chicago, B. & Q. Ry. Co. vs. City of Chicago, 166 U. S., 258.

Detroit City Ry. Co. vs. Guthard, 114 U. S., 133.

We submit that this Court is without jurisdiction to review any of the alleged Federal questions claimed by the plaintiff in error and without jurisdiction to review any of the alleged errors of law alleged to have been committed by the Supreme Court of the State of Iowa, and without jurisdiction to review any of the alleged erroneous conclusions of fact claimed to have been committed by the Supreme Court of the State of Iowa, and that the Motion of the defendants in error to dismiss this case for want of jurisdiction is well taken and should be sustained.

JAMES W. JAMISON,
WILLIAM CHAMBERLAIN,
City Solicitor, for Defendants in Error.

SUBJECT TO DEFENDANT IN ERROR'S MOTION AND CONTENTION THAT THIS COURT IS WITHOUT JURISDICTION TO REVIEW THE OPINION OF THE SUPREME COURT OF THE STATE OF IOWA, WE SUBMIT THAT THE OPINION OF THE SUPREME COURT OF THE STATE OF IOWA IS FULLY SUSTAINED BY THE EVIDENCE IN THE RECORD.

STATEMENT OF FACTS.

The statement of facts as contained on pages 15 to 72, inclusive of plaintiff in error's brief and argument falls far short of a true and fair statement of the facts as adduced on the trial of said cause. If relied upon said statement would give this Court an entirely erroneous idea of the actual facts brought out in the trial of this cause. A fair comparison of plaintiff in error's statement of facts with the record will satisfy this Court that such statement is unreliable and misleading and that no trustworthy argument can be based thereon.

HISTORY OF THE PLAINTIFF IN ERROR.

The record book, kept by the stockholders and directors of plaintiff in error Company, reveals the following history of its organization and of the rights acquired by ordinances passed by the City Council of the City of Cedar Rapids:

On November 17th, 1871, the City Council of the City of Cedar Rapids passed an ordinance (No. 112) granting to W. H. Whitta & Company permission to use the streets of said city for a period of twenty years to lay gas pipes therein for the purpose of supplying the inhabitants of said city with gas. The rights acquired under this ordinance were assigned to plaintiff, who constructed a system of gas works in said city and operated under said ordinance until it expired by limitation. (R-8).

On May 26th, 1896, the City Council of said city passed a further ordinance (No. 437) granting a renewal of the plaintiff's franchise for a term of nineteen years, eleven months and twenty-five days. (R-8, Ex. "B").

On June 2, 1896, plaintiff in error filed with the City Recorder of said city its written written acceptance of Orddinance No. 427. (R-10.)

On December 21, 1906, the City Council of the City of Cedar Rapids passed an ordinance (No. 752) fixing 90c per M. c. f. as the maximum rate which plaintiff in error or any other person or persons could lawfully charge the inhabitants of the City of Cedar Rapids for gas. (R-9, top of 10.)

W. H. Whitta, George F. Wright and A. E. Swift incorporated the Cedar Rapids Gas Light Company early in the year 1872. (R-572-582.)

The capital stock of the plaintiff in error was fixed at $150,000.00 and the only payment made to the Company for said stock was the assignment by W. H. Whitta & Company of the franchise granted to them by said ordinance. (R-572 to 576, inclusive.)

At the annual stockholders' meeting of the plaintiff in error, January 7, 1873, a resolution was unanimously adopted providing that the stock be re-distributed and that enough of the stock of each of the stockholders be taken up and re-issued to N. O. Swift. (R-574, top of 575.)

Nothing was paid by N. O. Swift or any other stockholder for any of the capital stock. In July, 1872, the plaintiff in error by resolution authorized the purchase of J. C. May of Lots 1 and 2, fractional Block 9, City of Cedar Rapids, for $1,150, deed to the same to be taken in the name of A. E. Swift. (R-571, 572, top of 573.)

On January 7, 1873, the Secretary reported that he had procured a deed to said lots from A. E. Swift October 2, 1872, and had paid therefor $1,200.00. (R-573 middle.)

At a meeting of the directors of plaintiff in error in July, 1872, a resolution was adopted authorizing a bond issue of $25,000, said bonds to bear interest at the rate of 10% and to be sold at a price of not less than 90c on the $1.00. (R-574, top of 575.)

At the annual meeting of the stockholders in July, 1873, the said bond issue was approved and the President was authorized to

pay the Company's debt with such bonds and to sell the balance for not less than 85c. (R-575.)

On November 4, 1874, George F. Wright reported to the Board that he had sold his stock in the Company, 375 shares, upon which 20% had been paid, to A. E. Swift. A. E. Swift reported that he had purchased stock of George F. Wright and that the books of the Company should show that his stock with the Company should stand for 750 shares. (R-575, bottom.)

At the same meeting of the Board of Directors (R-576) Director Whitta offered the following resolution, that as all the directors and stockholders of the Cedar Rapids Gas Light Company have bargained and sold to H. G. Higley, W. W. Higley and M. A. Higley an undivided one-half of the Cedar Rapids Gas Light Company stock, that we do now as officers and directors of the said Company resign our positions therein.

At a stockholders' meeting February 9, 1875 (R-576), the following resolution was offered:

RESOLVED, That as A. E. Swift, W. H. Whitta and N. O. Swift having sold out their entire stock of 750 shares in this Company to A. T. Averill, Homer Bishop, W. H. Thomas and John Thomas, that their certificates of stock have been duly assigned over to said Averill, Bishop and W. H. and John Thomas, and new stock issued instead, that the said stock shall now stand in the books of the Company as follows:

A. T. Averill	500 shares
Homer Bishop	150 shares
W. H. Thomas	50 shares
John Thomas	50 shares

At the same meeting the stock holders proceeded to elect as directors and officers, A. T. Averill, Homer Bishop and John Thomas, directors to take the place of Whitta, Swift and N. O. Swift.

On February 9, 1875, $15,000 of the second mortgage bonds was canceled. (R-577.)

At a stockholders' meeting January 7, 1873, the capital stock was fixed at 1,500 shares aggregating $150,000. R-141, bottom.)

On December 12, 1877, a dividend was declared on $150,000.00 capital stock of 1%. (R-143, bottom.)

A dividend was declared January 4, 1878, of 1%. (R-144.)
A dividend was declared in 1879 of 1%. (R-144.)
A dividend was declared in 1880 of 1%. (R-144.)
A dividend was declared in July, 1880, of 1%. (R-144.)
A dividend was declared in 1881 of 2%. (R-146.)

At a stockholders' meeting, January 3, 1893, the Board of Directors authorized an issue of $75,000.00 bonds with interest at the rate of 5%. (R-146.)

A dividend was declared in 1882 of 2%. (R-146.)
A dividend was declared in 1883 of 1%. (R-146.)
A dividend was declared in 1884 of 4%. (R-146.)

The record book containing the record of dividends paid by plaintiff in error for the years of 1884 to 1894 was claimed by Glen Averill to be lost or destroyed and could not be found. (R-

In 1894 the record of dividends declared is as follows (R-146):

January 2[illegible] 1894.....2%. (R-146.)
January 15, 1895.....2%. (R-146.)
January 7, 1896.....2%. (R-146.)
June 1, 1896.....2%. (R-582.)
January 7, 1897.....3%. (R-582.)
June 7, 1897.....3%. (R-582.)
January 4, 1898.....3%. (R-146.)
June 3, 1898.....4%. (R-146.)

Thereafter a dividend of 8% per annum payable semi-annually was paid each year. (R-144.)

The balance sheet of January 2, 1877, shows bonds issued amounting to $23,000.00. (R-146, bottom.)

At the time of the trial the bonded indebtedness of the Company was $75,000.00. (R- Evidence A. T. Averill, 179.)

The capital stock $150,000.00, and it was so admitted.
(R- Evidence of Averill, 179.)

At the time of the sale of the stock to A. T. Averill in 1874,

the half interest that Averill negotiated for was $16,000.00. (R-Evidence of Averill, 176.)

PLAINTIFF IN ERROR'S VALUE OF ITS PROPERTY.

The actual appraised value of plaintiff in error's physical property in the City of Cedar Rapids, as alleged in its petition (R-4), is $368,000.00.

The defendants in error aver that the actual value of the physical properties of the plaintiff used in the manufacture and distribution of gas would not exceed $200,000.00. The items that go to make the $368,000.00 thus alleged in the plaintiff in error's petition are made by A. T. Averill, the President of the Company. (R-548 to 51, Schedule "A," 551-559.)

Schedule "A" above referred to is a complete inventory of all of the property of the plaintiff in error as made by its President, A. T. Averill.

To the schedule aggregating $365,924.00 Mr. Averill claims there should be added as a part of the investment upon the earnings to be made $25,000.00 of working capital, making a total of $390,924.00. As against this valuation the defendant in error contends that there should be eliminated from the schedule the following items, which items were not used by the Company in its business of manufacturing and distributing of gas, and that they constitute no part of the property used by the plaintiff in error at the time of the adoption of Ordinance No. 752 fixing the rate of 90c per M. c. f.:

Deduct from the inventory the five lots and thirteen houses thereon known as annex and not used in manufacturing and distributing of gas	$ 16,500.00
Deduct from said inventory old purifiers which are not used and will never again be used by plaintiff in error and valued by plaintiff in error at	1,600.00
Deduct appraised value of 23,760 feet 3-inch high pressure mains laid to furnish gas to consumers at Kenwood Park and Marion and charged to Marion account	5,483.00
Deduct excess of appraised value over cost of boiler and stack purchased in 1906 for $1,507.65 and inventoried at $2,350.00	773.40

Deduct excess of inventory value over cost of new purifier house inventoried at $5,800.00, and purifying equipment inventoried at $5,000.00, which house and equipment in 1905 cost $9,527.00, leaving excess...	1,373.00
Deduct excess of inventory value over cost of cast iron street mains	4,818.00
Deduct from plaintiff in error's inventory items for increased value of street mains and service pipe, because property owners have paved the streets over mains, four items aggregating.....	43,580.00
Deduct cost of setting 3,811 meters at $2.25 each, the cost of setting said meters being charged as an annual expense in the manufacture and distribution of gas, and paid by the consumer.....	5,875.00
Deduct excess of inventory value of real estate, $20,000.00, over cost of real estate, $7,200.00.....	12,800.00
Deduct excess of inventory value of buildings over cost of new buildings	7,000.00
Deduct excess estimate of working capital.....	22,500.00
Total deductions claimed by defendants in error..	$112,302.40
This from the inventory of A. T. Averill of $390,924 leaves	278,621.60

The assessment rolls of the assessment and valuation of all of the plaintiff in error's property, signed by A. T. Averill, President, for the years 1903, 1904 and 1905, are as follows:

Two horses, 3 years old.....$	200.00
Two vehicles	20.00
Total personalty .....$	220.00
Total value real estate.....$	98,800.00
Taxable value	24,755.00
Lots 1, 2, 3, 4, and 5, Fr. Blk. 9.....	90,000.00
Lot 1, Block 10.....	400.00
Lot 2, Block 10.....	400.00
Lots 1, 2, 3, 4, and 5, Block 9.....	8,000.00

Above includes mains and streets and pipes, also 75% of new tank under construction. (R-270-271.)

In the Record, page 509, will be found the table as follows:

Total valuation of all property.....$	99,020.00
Net actual value of all property.....	99,020.00

Upon the adoption of the ordinance (No. 752) (R-9, top of

10) fixing the rate at 90c per M. c. f. a temporary writ of injunction was issued enjoining the enforcement of the 90c rate ordinance, at the instance of the plaintiff in error.

Evidence as to the valuation of the plaintiff in error's plant was produced in behalf of the plaintiff in error and evidence of experts as to the value of certain of the items inventoried by Mr. Averill and found in his evidence, was produced on behalf of the defendants in error. In the schedule of deductions which the defendants in error contend should be deducted from the valuation and inventory made by Mr. Averill, President, and the items comprising the deductions which defendants in error insist should be made are contained in the schedule above stated and are supported by evidence as to the value of the five lots and thirteen houses known as the annex, and the further fact established by the evidence that this so-called annex had never been used by the plaintiff in error in its business, but was purchased and held for the future needs of the Company.

The act of the municipality in fixing rates is purely legislative, and as it is by virtue of authority given by the legislature is presumed to have been in the proper exercise of the power conferred. For this reason the rate established by the ordinance assailed is presumed to be reasonable and can only be declared otherwise upon finding that the rate thus fixed is so low that its adoption will operate as a confiscation of plaintiff's property without due process of law. To determine this, we must first ascertain whether such will be the effect of this ordinance. Therefore, three findings of fact are primarily essential as a basis for calculation:

(1) What was a fair value of the company's plant at the date the ordinance was enacted?

(2) How much gas was then being furnished consumers?

(3) What was the cost per M. c. f. of gas at that time to manufacture and distribute to consumers?

With this data as a basis, we are able to estimate the profits the plant will be likely to yield from sales of gas at the rate fixed in the ordinance and by comparison of this, with the value of the property determined as near as may be whether the return for the

services rendered the public are so inadequate as to prove destructive to the Company's investment.

In order to determine the cost of manufacturing and distributing gas by the plaintiff in error to the consumers of the City of Cedar Rapids an examination of the plaintiff in error's books was made by Mr. James Hall, a chartered and certified accountant and member of the firm of Marwick, Mtichell & Co., covering a period of five years, commencing with the year 1902 and up to and including December, 1906. Mr. James Hall's audit is set out in full (R-608, Exhibits 255 to 275 to 611), from which we deduce the following schedule showing that for said five years the cost of the Company to manufacture and distribute gas, including leakage, in cents, per M. c. f. of gas sold, was as follows:

Year	Manufacturing	Distributing	Total
1902	c35.19	c21.61	c57.20
1903	35.33	21.22	59.35
1904	42.53	21.22	63.75
1905	38.68	28.77	67.45
1906	41.11	27.01	68.12
Average	c39.53	c24.51	c64.04

Without making any deductions, Mr. Hall found that the books of the plaintiff in error revealed the following as to profits, dividends, depreciation charged off, surplus, and the per cent which the surplus bore to the capital stock of the company, for each of the five years under review, 1902 to 1906, inclusive, to-wit:

	Profit	Dividend	Depreciation	Surplus	Per cent on Capital
Year 1902	$ 32,121.87	$12,000.00	$10,000.00	$10,181.87	6.75
Year 1903	36,962.14	12,100.00	20,000.00	4,962.14	3.31
Year 1904	38,171.64	12,000.00	12,500.00	13,671.64	9.11
Year 1905	35,437.49	12,000.00	10,000.00	13,437.49	8.96
Year 1906	31,610.64	12,000.00	13,000.00	6,610.64	4.41
Total	$174,303.78	$60,000.00	$65,500.00	$48,803.78	32.54

In the opinion of Mr. Hall, these charges for depreciation were excessive. They had not been computed on any scientific principle and bore no relation to the capital invested. He, therefore, in arriving at the true cost to plaintiff in error to manufacture and distribute gas, disregarded the said charges for depreciation and sub-

stituted a charge of 5 cents per thousand cubic feet of gas made for depreciation, covering the five year period, showing a total cost, exclusive of interest, of 64.04c per M. c. f.

Another expert witness in behalf of the defendant in error and employed by the City of Cedar Rapids almost a year prior to the passage of the 90c rate ordinance, estimated the total manufacture cost per M. c. f., namely, R. S. Fuertardo of Chicago, Illinois, and he made a report to the City of Cedar Rapids of such cost, from which we deduce the following table:

Total manufacturing cost, per M. c. f.	37c
Total distribution expense, including repairs, supervision, etc.	09c
Total office expense and fixed charges	14c
Making a total cost to manufacture and distribute gas in Cedar Rapids, per M. c. f.	60c

Mr. Fuertardo made his calculation on a basis of the value of the physical property of the plaintiff in error of $390,924.00. Defendant in error concedes a value of $278,621.60. The difference between plaintiff in error's appraisal and the defendant in error's, with elimination and appraisal is $112,302.40 less than plaintiff in error's.

An expert accountant employed by the plaintiff in error and who made an examination of the plaintiff in error's books as to the cost of manufacturing and distributing of gas in Cedar Rapids for the years 1905 and 1906 only, we deduce the following:

The cost for manufacturing and distributing gas, in cents, per M. c. f. of gas sold for the two years covered by his audit of 1905 and 1906:

	Kellogg	Hall	Difference
Year 1905	75.6 cents	67.45 cents	8.15 cents
Year 1906	79.9 cents	68.12 cents	11.78 cents

Kellogg's audit shows a cost for manufacturing and distributing gas of 8.15 cents per M. c. f. of gas sold in 1905 in excess of that found by the audit of Mr. Hall. This difference consists of 7.14 cents per M. c. f. excess of Kellogg's allowance over Hall's for depreciation for that year, and 1.01 cents per M. c. f. can be accounted for by Mr. Kellogg charging for gas used at works and

office at $1.00 per M. c. f., and also by a difference in quantity of gas sold, a different divisor being used.

In 1906 Kellogg's audit shows the cost to manufacture and distribute gas to be 11.78 cents per M. c. f. in excess of the cost found by Mr. Hall for the same period. This difference consists of 8.16 cents per M. c. f. of additional allowance by Mr. Kellogg over Mr. Hall for depreciation, which leaves a difference of 3.62 cents per M. c. f. between said audits, which in part is accounted for by Mr. Kellogg's failure to include receipts for gas sold to consumers at Marion. If such sales are accounted for at $1.15 per M. c. f. it will increase plaintiff's receipts in the audit of Mr. Kellogg by $1,840, which equals 1.95 cents per M. c. f.

This leaves a difference of 1.67 ients per M. c. f. between the two audits for 1906. This is arcounted for in part by Mr. Kellogg charging for gas used at the works and office at $1.00 per M. c. f. when it should have been entered at cost of manufacture. A part of this small difference can also be attributed to the fact that the two accountants used different divisors, occasioned by plaintiff in error making changes in the record of gas metered.

Defendant in error's audit covers the entire operation for five years and shows the average cost of manufacture and distributing gas for said period to be 64.04 cents per M. c. f., while the average cost of 1905 and 1906 was 67.785 cents per M. c. f., or 3.745 cents per M. c. f. in excess of the average cost for the five year period.

The defendant in error's position is that the two year period covered by the audit of Mr. Kellogg was too short a period to be used as a basis of cost and that for the two years selected many of the entries in the book were excessive.

Mr. Hall found that for the year 1907 at 90 cents per M. c. f., after allowing over $5,000.00 for depreciation and paying interest on the $75,000.00 of bonds, plaintiff in error would have available for distribution to its stockholders $23,700.10, which is equivalent to 15.8 per cent on the capital stock of plaintiff in error. Edward W. Beemis, a witness for the defendant in error, after examining the audit of the books as made by Mr. Hall showing the average

cost of gas for five years at Cedar Rapids to be 64.04 cents per M. c. f., said:

> "Taking the operating expense as given by Mr. Hall for five years at 64.04 cents, then to that I add an allowance for bad debts if there is no discount for prompt payment. I take that at .08 cents because such were the losses from bad debts of the People's Gas Company in Cleveland in 1905. The allowance for insurance and claims I have given it .093 cents, that being the experience of all the Massachusetts companies for the last three years as computed from the returns of sixty companies. The allowance for bad debts and insurance would make 1.73 cents, which, added to Mr. Hall's 64.04 cents, would give a gross possible cost under the new ordinance of 65.77 cents. Then there are certain deductions that I have made, saving on office expenses of at least 2 cents, $2,000.00, saving on leakage of a possible 2 cents, saving on depreciation and repairs on manufacturing plant used for the making of gas for Marion ½ cent, or a total deduction of 4.5 cents; this from the gross cost would leave the net cost 61.27 cents and that on the sale of 91,331.000 c. f. would be a profit of $26,239.40, which would leave for possible dividends $22,489.40 after paying interest." (R-670.)

Now, if we adopt the rule of law applied by the Supreme Court of the State of Iowa, from which opinion we quote the following:

> "The parties differ widely as to the value of the plant. These differences arise from estimates by witnesses as well as from the inclusion or exclusion of various elements which are said to affect values. There is no controversy, however, if we understand counsel rightly, but that the Company is entitled to have its property appraised at its fair value in December, 1906. What such an enterprise was then worth cannot be determined by the mere addition of the separate values of its component parts, nor from the cost alone, nor from what it formerly might have been sold at if such price were influenced by excessive rates, nor from what it might cost to replace alone, for this in view of its use would involve mere estimates of depreciation and contingencies incident to construction, but as was said in Smyth vs. Ames, 169 U. S., 466: 42 L. Ed. 819, 449, 'the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stocks, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statutes, and the sum required to meet operating expenses are all matters for

consideration and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the Company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be extracted from it for the use of a public highway than the services rendered by it are reasonably worth.'"

This was said with reference to fixing rates for common carriers, but evidently is applicable to cases of this character and was applied in determining the reasonableness of water rates in Cedar Rapids Water Company vs. City of Cedar Rapids, 118 Iowa, 234, 260.

We cannot at this time present the disputed propositions of fact more clearly or concisely than as contained in the opinion of the Supreme Court of the State of Iowa. We therefore adopt the opinion of the Supreme Court as a full, clear, concise and careful statement of the facts and of the several items in dispute, together with the conclusions of the Supreme Court of Iowa on the facts and the applications of the rules of law therein applied to the facts.

We therefore, further quote from the opinion of the Supreme Court of the State of Iowa. (R. 644 to 654.):

Any person or corporation contemplating the purchase of such a property quite naturally would inquire into its history, the character of its management in the past, and the amount expended in its construction. The several items of dispute may be considered separately.

The witnesses for the company estimated that $25,000 would be required as working capital, aside from the supplies ordinarily carried, which included 1,000 tons of coal and 10,000 gallons of oil, but were unable to sustain their opinion save by dealing in probabilities for its use, in the main speculative. It appears that collections for gas sold are made monthly, and, as these amount to about $8,000 per month, it is evident that, after the first month, enough would be on hand to meet current expenses. As supplies on hand were sufficient for immediate use, and for some months in the future, about all essential would be enough to take care of the

pay roll for the first month, and $2,500 would be ample for that purpose and other possible contingencies. Even this much appears to be more than the company in its experience has found it necessary to reserve. Also the sum of $100,000 was included by these witnesses as enhancement of value by reason of being a "going concern." As previously intimated, the value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management as contended by appellant. So, too, there are the inevitable mistakes which would not be likely in the construction of a new plant; but to put a new plant in profitable operation time would be required, and, aside from the intangible element of good will, the fact that the plant is in successful operation constitutes an element of value. As said, the value of the system as completed, earning a present in come, is the criterion. In so far as influenced by income, however, the computation necessarily must be made on the basis of reasonable charges, for whatever is exacted for a public service in excess of this is to be regarded as unlawful. Save as above indicated, the element of value designated a "going concern" is but another name for "good will," which is not to be taken into account in a case like this, where the company is granted a monopoly. Cedar Rapids Water Company v. City of Cedar Rapids, 118 Iowa, 234, 262, 91 N. W. 1081; Willcox v. Consolidated Gas Co., 29 Sup. Ct. 192, 53 L. Ed. ——. The witnesses for plaintiff took into account "good will" in giving their opinion of the enhancement of value because of being a going concern, and we have no means of separating these so as to ascertain their estimate of the separate advantage of completion so as to earn a present in come. The buildings of the company are located on fractional block 9 divided into five lots, and lots 1 and 2 in fractional block 10. All these lots front on First street and border the Cedar river. The government meander line seems to have been from 33 to 57 feet from First street, though the high-water mark was about 100 feet nearer the river. The company, by the construction of riprap work on made ground at the bottom

of the stream, has added about 50 feet more. Two of these lots cost the company $3,000 in 1902, and the others prior to that, as needed, $4,200. Of course, the company has not acquired title to the portion of the lots beyond the high-water mark, for, though long in occupancy, the statute of limitations does not run against the state. Park Commissioners v. Taylor, 133 Iowa, 453, 108 N. W. 927; Carr v. Moore, 119 Iowa, 152, 93 N. W. 52, 97 Am. St. Rep. 292; Tomlin v. Railway, 32 Iowa, 106, 7 Am. Rep. 176. But the company is in possession, and this was of value, especially as none save the state might challenge its right thereto. Without determining precisely where the high-water mark is, or reviewing the conflicting opinions of witnesses, we are inclined to think the evidence fairly shows this property worth between $15,000 and $20,000.

Across the street from the plant are lots 1 to 5 in block 9, known as the "Annex," and on which there are 13 small houses, rented by the company. The cost of these lots was $6,500 some eight years prior to the trial. The plaintiff estimated that their value has increased to $16,500. On the other hand, the city contends that they should not be considered at all in determining the value of the plant. The evidence is all but conclusive that they will not be required for the immediate expansion of the work, even though the officers of the company may have had this in contemplation. A witness for plaintiff testified that, with little more machinery, the present plant could be made to manufacture more than three times as much gas as now sold. Another justified his conclusion that the annex should be included by saying that the purchase was a wise precaution, and that, in view of the past growth of the city, these lots likely would soon be needed. The lots or others may be required some time, but no man can determine the contingencies of the future, and it will not do to burden the patrons of today in order to provide for possible needs of those of five or ten years hence, at least when this is conceded not to be necessary in order to provide for equal facilities when demanded. This property should not be included. The estimates concerning the value of the buildings varied from silghtly more than $30,000 down to

something less than $21,000. Witnesses called by plaintiff had enjoyed a larger experience, while those produced by the defendant entered into greater detail. A comparison of the evidence in connection with proof of the age of the buildings has led to the conclusion that $25,000 is not far from their true valuation. We are of opinion that plaintiff's real estate, excluding the annex, was fairly worth not to exceed $40,000 to $45,000, or $15,000 or $20,000 less than estimated by the witnesses of plaintiff.

But little controversy has arisen in estimating the value of other property, for, save certain items, the estimates of plaintiff's witnesses have been accepted by the city. Some purifiers were includd which had been discarded. They were appraised at $1,600. These formed no part of plant. If they were subsequently exchanged for something needed, this was long after the enactment of the ordinance. In estimating the value of the cast-iron mains and pipes computation was made in behalf of the company at $32.50 per ton; a reduction being allowed from the price of December, 1906, of $5.50 per ton for depreciation. The record indicates that the price taken was the highest at which mains and pipes had ever sold, and that these ranged in previous years down as low as $18 per ton. The pipes were not available for the market, and, in estimating their value in the ground, the price if iron on the particular day the ordinance was enacted ought not to be siezed upon as the criterion of value, whether it were the highest or lowest price. No one in calculating on the value of similar plant would adopt such a rule. The cost of the pipe, the prices at which it ordinarily had sold, in connection with present prices, should be considered in connection with depreciation by inevitable decay. An examination of the record has convinced us that outside figures have been made by plaintiff's expert, and that his estimate on the value of pipes and mains is several thousand dollars too high.

The company extended its activities so as to furnish gas to the people of Kenwood Park and Marion in 1905, and to do this laid a high pressure pipe from the holder to these places. The cost of this pipe to the city limits was $5,483, and was orginally charged to the Marion line. The evidence is to the effect that the pressure

from this pipe somewhat reinforces the system, and that a few residents of the city are furnished gas therefrom; but its principal use is to carry gas to the consumers beyond the city limits, and no more than one-fourth its value should be included in the appraisement.

The sum of $43,580 was added owing to the alleged increase of value of pipes and mains because of being underneath the pavement. The company had laid them before the paving was done, but it is argued that, as the value of the mains and pipes are to be estimated when in the ground, what it would now cost because of the pavement to put them there should be included in determining present value. If so, the contingency of having to remove them at the expiration of the franchise also should be taken into account. Moreover, the facts that most of the paved streets are paralleled by unpaved alleys or parkings in which pipes might be laid without removing the pavement, and possibly with less danger from electrolysis, is entitled to consideration. Nor is it to be forgotten that pavements yield to the ravages of time, and that with new pavements new pipe may be laid. Undoubtedly the values of the pipes are somewhat enhanced because of their location, but the entire immediate cost of opening and replacing the pavement is not the criterion for value which should be adopted. The contention illustrates how inequitable would be a rule arbitrarily fixing the value as that for which a system might be replaced. Aside from this being impractical it may safely be said that there is hardly an enterprise of this character, which, were it destroyed, would be restored as it was before. In ascertaining values in this way, the worth of a new plant of equal capacity, efficiency, and durability, with proper discounts for defects in the old and depreciation for use, should be the measure of value rather than the cost of exact duplication.

Included in plaintiff's estimate of values are: Interest on capital during construction, $22,415; promotion and organization, $14,943.69; and engineering, $18,679.61. These are mere estimates of what might be expended for these purposes in the construction of a new plant. Of course, all the money required would not neces-

sarily remain idle during construction, and the witness admitted that the only expense for promotion and organization he could think of would be attorney's fees in preparing proper papers. The expense for engineering was said to be the percentage taken into consideration by those contemplating such enterprises. Manifestly these estimates are largely speculative. Nothing can be allowed for the promotion and organization of the company, for it is immaterial by whom the plant may be owned in estimating its value.

Some other matters are discussed which do not require special attention. The plaintiff's chief expert estimated the physical properties to be worth $365,564.41, and the petition alleged these to be $368,000. The defendant conceded the value of the plant to be $278,621.60. It had cost but $267,500. It had been assessed for taxation on the sworn statements of its president in 1903 at $99,020, in 1905 at $95,300 and in 1907 at $175,000, raised to $250,000 by the board of equalization, from which the company appealed as to any valuation above $108,000. In the five years prior to 1907, the company had charged off its books $65,000 for depreciation in value. And yet, notwithstanding the small value of the land, relatively, how marvelously has this property, consisting of machinery, pipes, mains, and the like, advanced in value notwithstanding the constant depreciation due to the combined forces of adolescence, absolescence, inadequacy, and decay. An examination of the record has convinced us that the witnesses of the plaintiff have overlooked nothing which might tend to enhance their estimates of the value of the plant, and that in many instances their estimates are exaggerated. Undoubtedly, risks have been incurred, and possibly mistakes have been made. Doubtless the purpose in fixing the high rates in the first ordinance was to compensate for these risks. Owners of such property, on the one hand, ought not to be excluded from the advantage of the prudence and foresight in its development, nor, on the other, should they be relieved of the consequences of mistakes and errors of judgment. At best, what a thing is worth is peculiarily a matter of opinion, and opinions of this kind ordinarily are as numerous as the witnesses who express them. A careful review of the entire record, which has been re-

peated, has led to the conclusion that a fair valuation of the entire plant is somewhere between $300,000 and $350,000. This is largely in excess of its cost, but, according to the record, the value of material as well as the cost of labor has greatly increased since much of the plant was constructed. On the other hand, to put the value above the limit mentioned would require us to ignore the depreciation due to age, decay, inadequacy, and the like, on account of which defendant has been chaging off its books large sums, and which the proof shows should be taken into account.

3. In 1905, the company sold 76,782,600 cubic feet of gas, in 1906, 91,173,200 cubic feet, and in 1907, 103,079,190 cubic feet. The evidence is to the effect that reduced prices increase the consumption, so that the last amount safely may be assumed as the minimum amount that will likely be sold hereafter. This, computed at 90 cents per 1,000 cubic feet, gives the gross annual income as $92,771.10. Undoubtedly some deductions should be made for bad debts, but according to the evidence an allowance of $.008 per 1,000 cubic feet will cover this item. The amount collected from each of the 4,000 consumers of gas is reliatively small. Under the former ordinance 10 cents per 1,000 cubic feet was exacted in event of failure to pay by the 10th of the month. The ordinance assailed fixes a level price, and appellant contends that the elimination of the discount for prompt payment will entail an expense of 5 cents per 1,000 cubic feet for collecting gas bills. This assumes that an equally efficient method of inducing payment may not be adopted by the company. That such corporations may adopt rules and regulations for the transaction of their business is well settled by authority. Shephard v. Gaslight Company, 6 Wis. 539, 70 Am. Dec. 479; Tacoma Hotel Co. v. Tacoma Water Co., 3 Wash. St. 316, 28 Pac. 516, 14 L. R. A. 669, 28 Am. St. Rep. 35; Harbison v. Knoxville Water Co. (Tenn. Ch.) 53 S. W. 993; Williams v. Mutual Gas Co., 52 Mich. 499, 18 N. W. 236, 50 Am. Rep. 266.

In each of these cases a rule requiring security or deposit of money in advance was approved. Of course, such rules must be reasonable and not impose an undue burden on the consumer. In People v. Manhattan Gaslight Company, 45 Barb. (N. Y.) 136, a

rule that the company would refuse to furnish gas to one who had failed to pay his past-due bill was held to be reasonable, but in Crumley v. Water Co., 99 Tenn. 420, 41 S. W. 1058, it seems to have been held that a water company may not refuse to furnish water on the ground that the applicant is indebted for a previous supply for which he is unable or refuses to pay. To the same effect, see Gaslight Company v. Colliday, 25 Md. 1. In American Waterworks Company v. State ex rel. Walker, 46 Neb. 194, 64 N. W. 711, 30 L. R. A. 447, 50 Am. St. Rep. 610, the rule required water rents to be paid on the first days of January and July of each year in advance at the company's office, and "if not paid within 30 days after they fall due the water will be turned off and not turned on until all back rents are paid, increasing the charge by $1 for turning water on and off." The court, while conceding the power of the company to make all reasonable regulations, held that that part of the rule exacting $1 as a condition precedent to turning on again unreasonable and void. See, also, State v. Neb. Tel. Co., 17 Neb. 126, 22 N. W. 237, 52 Am. Rep. 404. In Water Company v. Adams, 84 Me. 472, 24 Atl. 840, 30 Am. St. Rep. 368, a rule that users of water liable for rent for the whole year, whether actually used for that length of time, but not requiring them to pay in advance, was held to be unreasonable. In Shephard v. Gaslight Co., supra, the court held that the company might not attach a penalty for the violation of its rules. State v. Butte City Water Co., 18 Mont. 199, 44 Pac. 966, 32 L. R. A. 697, 56 Am. St. Rep. 574, decided that payment in advance might be exacted, but that the company could not refuse to furnish water to others than owners of property. In Miller v. Wilkesbarre Gas Co., 206 Pa. 254, 55 Atl. 974, a rule that supply be stopped unless all arrearages be paid, whether owing by tenant in possession or his predecessor, was approved but held not to be binding in the absence of notice. In Owensboro Gaslight Company v. Hildebrand (Ky.) 42 S. W. 351, a rule requiring the deposit of $20 in advance was declared reasonable. To the same effect, see Northern Colorado, etc., Co. v. Richards, 22 Colo. 450, 45 Pac. 423. See, also, Thornton on Oils & Gas, § 541, where decisions are collected relating to the reason-

ableness of amounts required to be deposited in advance. The company may not base a rule on the theory that the people as a whole are dishonest, but it has the right to adopt a rule which, while giving the honest citizen what he pays for, will prevent the dishonest from getting that which he will never pay for. See Harbison v. Knoxville Water Co., supra. That the company may establish a rule exacting payment in advance in reasonable amounts, or the deposit of security, at least is fully settled by the authorities, and it would seem that the requirement of security or deposit of money in advance would be quite as effective in enforcing prompt payments and more so in avoiding bad debts than an increase in price upon failure to pay by a time stated, and it does not appear that collecting through such method or some other reasonable method that may be devised not obnoxious to the ordinance would entail greater expense on the company than under that of allowing discounts. At any rate, we cannot assume in advance that consumers will not comply with such reasonable rules for the security of the company as may be embodied in their contracts, nor, in the absence of satisfactory proof, that unusual expense will be incurred in collecting the price of the gas sold.

4. What does it cost to manufacture and distribute gas per 1,000 cubic feet to the consumer? The witnesses have estimated these separately, in the first including the expense up to storing in the holder, and in the last all other items in delivering to and collecting the price from the consumer. They do not differ very materially on the cost of the several items, but are not entirely agreed as to what shall be included. Several persons of large experience testified on the subject that necessarily where the business of a company is well managed, and its accounts fairly kept, these furnish the best evidence of the cost of service rendered the public. The representatives of two accountant companies examined the books of plaintiff, the Audit Company of Illinois represented by George P. Kellogg for it, and the Marwick & Mitchell Company of Chicago representaed by J. W. Hall for the city. They agreed that the books were fairly kept, and there was little difference between them in their deductions therefrom, same in the items making

up the account. The one included $10,000 for depreciation in 1905 and $13,000 for 1906, while the other computed depreciation at $.05 per 1,000 cubic feet of the gas made, being $4,431. 71 for 1905, and $5,330.82 for 1906. Their computations were made by including all the expenses for the year, including depreciation as above, and deducting therefrom the amount received for residuals, such as coke and tar, and dividing the difference by the number of 1,000 cubic feet of gas manufactured less leakage. The quotient, of course, would be the cost of manufacturing and delivering 1,000 cubic feet of gas. In this way plaintiff's accountant found that the cost per 1,000 cubic feet in 1905 was $.756, and in 1906 $.799. According to the defendant's accountant the cost for 1905 was $.6745 per 1,000 cubic feet, and for 1906 $.6812. As said, these different conclusions as to 1905 and 1906 resulted from some differences in the items included, to which attention is now directed. The cost of mixed gas (that is, of coal and water gas) in the holder for 1905 was found by plaintiff's accountant to be $.394, and in 1906 $.415, per 1,000 cubic feet, while defendant's accountant made such cost $.3868 in 1905, and $.4111 in 1906. This slight difference is mainly due to the charge of plaintiff's accountant of $1 per 1,000 cubic feet for gas used at the works, while defendant's accountant allowed the actual cost. The latter was correct, for in ascertaining the cost of manufacture that used to accomplish this should be computed at the cost only. The defendant's accountant very properly excluded in allowance for taxes on the annex. It appears that the company had charged off its books as depreciation in the value of its property due to use the following sums: $10,000 in 1902, $20,000 in 1903, $12,000 in 1904, $10,000 in 1905, $13,000 in 1906.

In computing the expense of distribution, the plaintiff's accountant, as said, included these items, while the defendant's accountant allowed for depreciation of property $.05 per 1,000 cubic feet of gas manufactured. This would make a difference in manufacturing and distributing gas sold in 1905 of $.0714 per 1,000 cubic feet, and in 1906 of $.0816. There can be no doubt as to the justice of some allowance for depreciation. A public service cor-

poration is under no obligation to sacrifice its property for the public good. Nor is it bound to see its property gradually wasted by wear and decay without making provision for its replacement. It is entitled to earn enough not only to meet the expenses of current repairs, but also to provide means for replacing the parts of the plant when these can no longer be used. "It is entitled to see that from its earnings the value of the property is kept unimpaired, so that at the end of any given term of years the original investment shall remain as it was at the beginning. It is not only the right of the company to make such provision, but it is its duty to its bond and stock holders and, in the case of a public service corporation at least, its plain duty to the public. If a different course were pursued, the only method of providing for displacement of property which has ceased to be useful would be the investment of new capital and the issue of new bonds or stock. This course would lead to a constantly increasing variance between present value and bond and stock capitalization—a tendency which would inevitably lead to disaster either to the stockholders or to the public, or both." This situation ought not to be brought about either by the payment of excessive dividends or the omission to exact proper prices for the output. Mayor, etc., of Knoxville v. Knoxville Water Co., 29 Sup. Ct. 148, 53 L. Ed. ——.

There is a wide divergence of opinion as to the amount that should be set aside for depreciation, but all the witnesses concede that their estimates are without data as a foundation, though the elements to be taken into account are enumerated. As contended, scarcely two parts of the plant will cease to be useful at the same time. Some will last but a brief period, while others may be serving their purposes for more than a century to come. Some stress is put on the possibility of enlargement and of the necessity of replacing parts with others adequate to meet increased demands, but there is no reason to think that the income will not keep pace with the extensions or enlargements. In other words, profits on the additional sales of gas will in all probability yield an adequate income on the amounts expended for the expansion of the plant. Should replacement of some of the machinery now in use prove necessary

because of new inventions, this in all probability will be owing to the economy which may be effected thereby in production, and again the saving may be expected to yield a fair return for the new investment. Moreover, the rate fixed by this ordinance is not necessarily perpetual, but subject to such changes by the governing board of the city as shall be essential to meet the contingencies of the future. The expert accountant who testified in behalf of defendant allowed 5 cents per 1,000 cubic feet of gas manufactured for depreciation, and another, who had made a study of the durability of different material, testified that if 1.7 per cent of the value of the plant were put into a sinking fund drawing annual interest at 4 per cent per annum, this would produce enough to replace the plant in 30 years. The amount allowed by the accountant approximates this percentage of the value, and we are of opinion that in view of the evidence adduced it will prove adequate for replacement of the different portions of the plant when this shall become necessary. Appellee insists that the average cost during the past five years should be adopted. This, including depreciation, would be $.6404 per 1,000 feet. Another item is not to be overlooked, and that is the probability that in the future the company, in view of this investigation, will be required to pay its just portion of the burdens of taxation. What the increase shall be cannot be told in advance, but it is likely to be enough to offset any decrease in the cost of fittings. The cost of gas production during the years 1905 and 1906 was much higher than for the years previous. This was not owing to the increased cost of fuel. The accountant of defendants testified that the cost of manufacturing and distribution, including allowance for depreciation, was $.57 per 1,000 cubic feet in 1902, $.5935 in 1903, $.6375 in 1904. This increase in cost was due in large part to the increase in the fittings account, such as installing stoves, meters, and the like. In 1902 there was a profit in this account of $283.99, in 1903, an expense of $972.80, in 1904 an expense of $39.60, in 1905 of $6,758.89, and in 1906 of $5,943.83. This increase of expense of fittings, etc., over profits on the sale of stoves, etc., is not satisfactorily explained. There is no reason for thinking so large an outlay as in the last two years will be required

in the future, and the probable increase therein may safely be allowed to offset probable increase in taxes. Upon an examination of the entire record, we are satisfied that the cost of manufacturing, distribution, and of making collections should not exceed $.6812 per 1,000 cubic feet at the time the ordinance was enacted.

5. The expense involved in the manufacture and sale of gas in 1907, including depreciation then, was $70,217.54. This deducted from the probate receipts leaves a net profit for the year of $22,553.56. This is $1,153.56 above 8 per cent on the cost as alleged by the company. It is $1,553.36 in excess of 7 per cent if the plant be estimated at the valuation of $300,000, or a like sum above 6 per cent if it is worth $350,000. If to these several margins be added the difference in the rates mentioned and that paid on the $75,000 of bonded indebtedness, the first of these will be increased by $2,250, the second by $1,500, and the third by $750. In other words, if the interest on the money borrowed be deducted from the profits, there will remain $18,803.56 net income realized on a net investment of $192,500 or on a net value of $225,000 to $27,500 or a return of 7 or 8 per cent per annum on the value of the plant over the incumbrance. It may be that the margin is not large in view of the contingency of increased cost of collections and the risks incident to all enterprises of this kind, but we are not fixing the rates. That is purely a legislative function. The court's duty ends when it has found that the rates are not so low as clearly to be confiscatory in character. "Judicial interference should never occur unless the case presents, clearly and beyond all doubt, such a flagrant attack upon the rights of property under the guise of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use." San Diego Land & Town Lot Co. v. National City, 174 U. S. 739, 19 Sup. Ct. 804, 43 L. Ed. 1154.

What compensation will be reasonable is a question of fact to be determined in the light of the evidence in each particular case. No court of last resort has undertaken to say what per cent on the value such an investment should yield its owners in all cases. In

Cedar Rapids Water Co. v. Cedar Rapids, 118 Iowa, 234, 263, 91 N. W. 1081, 1091, the court said: "The net earnings upon this showing, if not large, are substantial. The court cannot undertake to guaranty the company any fixed or certain return upon its investment. The exercise of such a power would work an utter destruction of the legislative right to regulate rates of water companies and other corporations operating works of public utility. We think the decisions have already gone to the verge of safety in nullifying legislative acts of this character; and to go farther, and say that the courts will not only preserve property from confiscation and destruction by legislative power, but will also assure to its owners a definite and fixed rate of profit upon their investment, would be an act of judicial usurpation." In that case the value of the plant was estimated from $400,000 to $500,000, and rates yielding an income of 5½ per cent on the former sum of 4½ per cent on the latter were held not to be confiscatory; the court remarking that the "estimate of earnings may be very materially reduced, or the estimate of the value of the plant be very materially increased before the court will be justified in saying that plaintiff's property is being exposed to destruction or confiscation by an unprofitable schedule of rates." In Mayor, etc., of City of Knoxville v. Knoxville Water Co., 29 Sup. Ct. 148, 53 L. Ed. ——, the court, after reviewing former opinions, concluded that: "Under any aspect of the evidence the company is certain to obtain a substantial net revenue under the operation of the ordinance. The net income, in any event, would be substantially 6 per cent, or 4 per cent after an allowance of 2 per cent for depreciation. See Stanislaus County v. San Joaquin, etc., Irrigation Co., 192 U. S. 201, 24 Sup. Ct. 241, 48 L. Ed. 406. We cannot know clearly that the revenue would not much exceed that return. We do not feel called upon to determine whether a demonstrated reduction of income to that point would or would not amount to confiscation. Where the case rests, as it does here, not upon observation of the actual operation under the ordinance, but upon speculations as to its effect, based upon the operations of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of

the return which would save the effect of the ordinance from confiscation. It is enough that the whole case leaves us in grave doubt." In Stanislaus County v. Irrigation Co., cited, it was remarked concerning an irragtion canal that: "Much of the capital was invested between 20 and 30 years ago, and to be able still to realize 6 per cent upon the money originally invested is more than most people are able to accomplish in a nordinary investment and more than is necessary in order to give just compensation for property at the time it is used for the public purpose originally intended." In Willcox v. Consolidated Gas Company, 29 Sup. Ct. 192, 53 L. Ed. ——, the court, after observing that "there is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested," concurred in the finding of the trial court that, in view of the facts proven, "complainant is entitled to 6 per cent on the fair value of its property devoted to public use."

When government bonds bearing 2 per cent annual interest are selling at a premium, and those issued by state or municipalities at little if any more than double such rate are in demand, and when the current rate of interest on "gilt edge" securities on real estate or public service corporations rarely exceeds 5 per cent, it will not do for the courts to say that the income, above all expenses, including taxes, on property devoted to the public service, must necessarily much exceed the last-mentioned rate to avoid the charge of being confiscatory. What such plants usually earn, unless they be based on reasonable charges, cannot be accepted as a criterion, for usually the rates fixed are all the tariff will bear. Possibly the plant should earn a return equal to the interest paid in the community on investments equally permanent in character, but what this was is not disclosed by the record. The rates fixed by the ordinance are likely to yield enough above 6 per cent per annum on the present value of the plant to cover contingencies which may not have been taken into account, and, in view of the fact that effect of the ordinance is largely speculative, we are not inclined to interfere with its operation. If upon a fair trial it shall appear that under the new schedule the rates are not sufficiently remunerative, a remedy may

be applied. The function of fixing compensation for public services should be exercised with a keen sense of justice on the part of the regulating body. The company should aid therein by a frank and full disclosure of its affairs. When so approached on either side, it would seem that rates might be settled upon which, on the one hand, would not dampen the zeal to furnish the best service and extend the plant as the needs of an advancing municipality shall require, nor, on the other hand, extract from the people more than fair compensation for the service received. Should the ordinance, after being put in operation and given a fair test, be found to deprive plaintiff of a fair return on its investment, it ought not to be deprived of the opportunity of again presenting the matter in court.

For this reason the petition will be dismissed, without prejudice to such action.

As so modified, the judgment is affirmed.

THE QUESTION OF FACT INVOLVED IN VIEW OF THE FACT THAT THE PLAINTIFF'S PETITION WAS DISMISSED WITHOUT PREJUDICE TO A FUTURE ACTION, THE QUESTION NOW PRESENTED IS NOTHING BUT A MOOT QUESTION.

Having presented this question in our motion to dismiss for want of jurisdiction we call attention to Div. IV, pages 33 and 34 of our Brief on the Motion, wherein we have fully discussed this proposition and cited the case of Consolidated Gas Company of N. Y. vs. City of New York, 212 U. S., 19.

IN THE BRIEF OF THE PLAINTIFF IN ERROR (Div. 6, pages 111 and 112) TWO QUESTIONS ARE CLAIMED TO BE PROPERLY BEFORE THIS COURT FOR REVIEW:

"1. The first question is as to whether the obligations of plaintiff's franchise (R. 8) were impaired by the adoption of the 90c ordinance eliminating the discount provision in violation of Section 10 of Article 1 of the federal constitution.

To determine this question requires no inquiry into any disputed question of fact. It being admitted that the franchise was

granted and the ordinance fixing the 90c rate was adopted by the city, it is therefore, a question of law as to whether the obligations of the franchise contract are impaired or not.

2. The next question is as to whether the rate fixed for gas by the 90c ordinance is so low as to deprive the plaintiff in error of its property without just compensation and without due process of law in violation of Section 1 of the 14th Amendment to the Constitution of the United States."

It is further contended that following the rule announced in the case of Knoxville vs. Knoxville Water Company, 212 U. S., 1. the court will inquire into all the facts and try the questions involved *de novo*. In this contention of the plaintiff in error, we beg to point out that the above case reached this court on an appeal from the Circuit Court of the U. S. for the Eastern District of Tennessee to review a decree injoining the enforcement of a municipal ordinance fixing the maximum water rates. There is a well defined distinction between the power of this court to review a case brought to this court on an appeal and a case brought to this court on a writ of error. This distinction is so familiar to this court that it would be presumptious in us to attempt to point it out or cite authorities.

We beg, however, to call this court's attention to the concluding announcement in the Knoxville case above cited, as follows:

"We do not feel called upon to determine whether a demonstrated reduction of income would or would not amount to confiscation. Where the case rests, as it does here, not upon observation of the actual operation under the ordinance, but upon speculations as to its effect, based upon the operation of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of the return which would save the effect of the ordinance from confiscation. It is enough that the whole case leaves us in grave doubt. The valuation of the property was an estimate and is greatly disputed. The expense account was not agreed upon. The ordinance had not actually been put into operation; the inferences were based upon the operations of the preceding year; * * * If hereafter it shall appear, under the actual

operation of the ordinance, that the returns allowed by it operates as a confiscation of property, nothing in this judgment will prevent another application to the courts of the United States or to the courts of the State of Tennessee. But as the case now stands, there is no such certainty that the rates prescribed will necessarily have the effect of denying to the company such a return as would avoid confiscation. For these reasons the decree is reversed and the case remanded to the court below with directions to dismiss the bill without prejudice."

AS TO THE IMPAIRMENT OF THE OBLIGATION OF THE ALLEGED FRANCHISE CONTRACT, PLAINTIFF IN ERROR IN ITS BRIEF ASSIGNED ERROR THAT THE SUPREME COURT OF THE STATE OF IOWA COMMITTED AN ERROR IN HOLDING THAT ORDINANCE NO. 427 (R-8) DID NOT CONSTITUTE A CONTRACT.

By reference to plaintiff in error's brief, Division "A," pages 72 to 74, it concedes that the contract on the part of the city is the granting of a franchise to the plaintiff in error to occupy the streets, avenues, etc., with its pipes and mains for conveyance of gas and that the contract implies an agreement upon the part of the city that it will not pass any ordinance depriving the plaintiff in error of the discount privilege.

It is conceded in plaintiff in error's brief (page 74) that there was reserved to the city, the power to fix the rates in the future as provided by Section 725 of the Code of Iowa, but that such rates so fixed must not be unremunerative to the Company.

The trouble with this proposition is, that if it be conceded (as it is) by plaintiff in error that at the time of the renewal of its franchise by the adoption of Ordinance 427, plaintiff in error accepted of it, subject to the reserved power in the City of Cedar Rapids to fix rates, then the only question that could possibly arise when the defendant in error should exercise its reserved power under the provision of Section 725 of the Code would be whether the rate fixed in pursuance of the provision of Section 725 of the

Code by the municipal council was so low as to deprive the plaintiff in error of its property without due process of law.

This would present a question of fact and of fact only, the solution of which would have to be determined from the evidence in the case. It would not deprive the plaintiff in error of any contract right because it is conceded that plaintiff in error accepted of its franchise subject to the reserved power in the city to fix other rates than those provided for in the ordinance granting the franchise and thus eliminates all of the claim of the alleged contract for discount from the case; and disposes of the alleged Federal question of a violation of the contract.

If this Court shall conclude to go into the facts and determine this case on the question of fact involved, we believe it will arrive at the same conclusion that the Supreme Court of the State of Iowa did. It is impossible for the plaintiff in error to have been prejudiced by reason of the disposition made of the case by the Supreme Court of the State of Iowa, as its rights were fully protected and all it is required to do is to put the rates into force, provided in the ordinance, and if after a fair test it is found that such rates are not remunerative, its right to begin a new action exists.

We submit that the conclusion of the Supreme Court of the State of Iowa was correct without prejudice to the plaintiff in error, and this whether this Court shall review the facts and determine the case upon the questions of fact involved or shall sustain the motion of the defendant in error to dismiss the case.

Respectfully submitted,

JAMES W. JAMISON, AND
WILLIAM CHAMBERLAIN,
City Solicitor, for Defendants in Error.

IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS ET AL.,
Defendants in Error.

No. 363

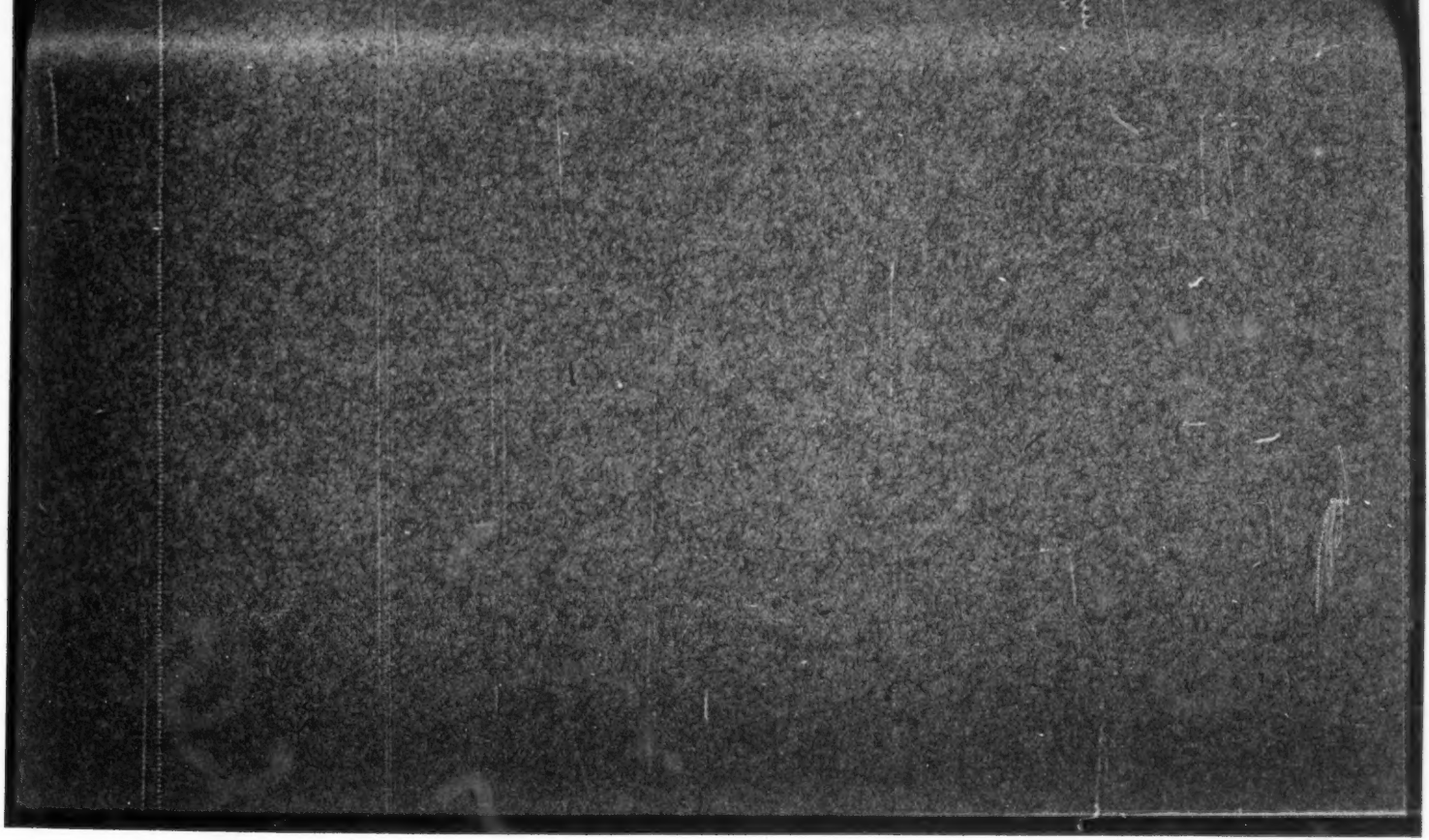
IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co. vs. The City of Cedar Rapids, et al., 120 N. W. Rep. 366.

Resistance to Motion to Dismiss Writ of Error or to Affirm

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.



IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY,
Plaintiff in Error,

vs.

THE CITY OF CEDAR RAPIDS, ET AL.,
Defendants in Error.

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

Case Reported Below as Cedar Rapids Gas Light Co vs. The City of Cedar Rapids, et al., 120 N. W. Rep. 966.

Resistance to Motion to Dismiss Writ of Error or to Affirm

JOHN N. HUGHES,
JAMES H. TREWIN,
JOHN M. GRIMM,
For Plaintiff in Error.

JAMES W. JAMISON,
JOHN M. REDMOND, City Solicitor,
For Defendants in Error.

Resistance to Motion of Defendants in Error to Dismiss Writ of Error or to Affirm.

The plaintiff in error is a public service corporation manufacturing, distributing and selling gas in the City of Cedar Rapids, Iowa, under a franchise granted by the City

Council thereof May 26, 1896, and continuing 19 years, 11 months and 25 days. The said franchise permitted the plaintiff to charge $1.80 a thousand cubic feet for gas, and to allow to consumers paying on or before the 10th of the month a discount of twenty cents per thousand cubic feet. The rate for gas had been voluntarily reduced by the Company until on January 1st, 1907, it was $1.25 per thousand cubic feet for gas with ten cents discount if paid on or before the 10th of the month succeeding that in which the gas was used.

On December 21, 1906, the City Council enacted an ordinance, effective January 1, 1907, as follows:

ORDINANCE NO. 752.

AN ORDINANCE REGULATING THE RATES TO BE CHARGED FOR GAS AND PROVIDING THE PENALTY FOR THE VIOLATION THEREOF.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CEDAR RAPIDS, IOWA:

Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city.

This suit in equity was brought in the District Court of Linn County, Iowa, to enjoin the enforcement of said ordinance on the ground:

1. That the said ordinance impaired the obligations of the contract between the plaintiff in error and the city, in violation of Section 10 of Article I of the Constitution of the United States.

2. That the rate of ninety cents (90c) was unreasonable and unremunerative, and deprived the plaintiff of property

without just compensation and without due process of law, in violation of the provisions of Section 1 of the 14th Amendment to the Constitution of the United States.

Trial was had in the District Court, and plaintiff's petition was dismissed. An appeal was taken to the Supreme Court of Iowa and trial had *de novo*, and the decree of the District Court was affirmed. A restraining order was granted in said cause, and was continued in force by the Supreme Court of Iowa until otherwise determined by this court, and the case was brought into this court on Writ of Error.

The Motion to Dismiss Or Affirm Is Based Upon Four Grounds.

That this court has no jurisdiction:

1. Because no federal question was presented in the pleadings in the state courts.

2. Because the Supreme Court of Iowa having determined the rate fixed for gas by the ordinance in question, to be reasonable under the facts presented in that court, that this court will not re-examine the facts on Writ of Error, nor inquire into the record to determine whether or not a federal question is presented.

3. Because the plaintiff has had the benefit of due process of law through the decisions of the District and Supreme Courts of Iowa.

4. Because only a moot question is presented on this record for the reason that the Supreme Court of Iowa dismissed the petition without prejudice to the right of the plaintiff in error to institute another suit if after trial of the 90 cent rate it should be found that such rate would not produce a reasonable return to plaintiff for the use of its property.

I.

IS A FEDERAL QUESTION RAISED BY THE PLEADINGS.

The contention of defendants in error that no federal questions were raised on the pleadings is without merit, as an examination of the petition will disclose.

It is alleged in substance, that the plaintiff in error is a corporation for pecuniary profit, engaged in furnishing gas for domestic and other purposes to the inhabitants of the City of Cedar Rapids, Iowa; that the defendant in error is a municipal corporation; that the original franchise was granted to the plaintiff in error on the 17th day of November, 1871, and amendments thereof granted on the 26th day of May, A. D. 1896, the same to run for nineteen (19) years, eleven (11) months, and twenty-five (25) days from that date; that said ordinances were accepted by the plaintiff in error and at the time of the commencement it was acting thereunder; that according to the provisions of said ordinance, the plaintiff in error was required to furnish gas to the inhabitants of the city for lighting at a price not to exceed $1.80 per thousand cubic feet, and twenty (20) cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption, and where gas is used for fuel in quantities of one thousand or more cubic feet per month the discount shall be 45 cents per thousand cubic feet for all purposes, if paid on the same terms and conditions as above provided for lighting; that thereafter the plaintiff in error successively reduced the price of gas for lighting until at the time of the commencement of this suit, it made a charge of $1.25 per thousand cubic feet with a discount to the consumer of 10 cents per thousand cubic feet if paid on or before the 10th day of the succeeding month; that Ordinance No. 752 of the City of Cedar Rapids, Iowa, fixed the price for gas as follows:

"Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety (90) cents per thousand feet therefor, and no person, firm or corporation shall charge, exact, or receive in excess of ninety (90) cents per thousand feet for gas supplied by them to any inhabitant of said city."

That in pursuance of the authority conferred upon the plaintiff by said ordinances, and in discharge of the obligations imposed upon it thereby, and relying upon the same as a contract between the parties the plaintiff in error built, erected, established, maintained and operated, and still maintains and operates a system of gas works in the City of Cedar Rapids, Iowa. That the said rate of $1.25 per thousand cubic feet for gas with ten (10) cents discount for prompt payment did not pay during the fiscal year preceding the beginning of this suit more than six per cent. on the actual value of the investment of the plaintiff over and above the operating expenses, renewals, and other fixed charges, and will not during the current year pay more than a like amount, and that a reasonable estimate of the future earnings of the plant for the next three fiscal years, under the present rates, and after meeting the operating expenses and fixed charges, will not exceed six percent on the actual and reasonable value of the capital invested. That the actual value of the property of plaintiff in error was at the time of the beginning of the suit $368,000 exclusive of going value and of franchise value, and exclusive also of a necessary working capital of $25,000, making in all an actual investment of $400,000, which plaintiff has in use in the service of its patrons in the City of Cedar Rapids, Iowa, and upon which it is entitled to earn dividends, after its expenses and fixed charges are paid. And after fully setting forth all the details as to the value of the property and the earning power of the plaintiff, the defendant further alleges: "That the proposed ordinance passed by the defendant in error, as above set forth, on the 21st day of December, 1906, fixing rates to be charged by plaintiff, is in violation of Section 1 of the Fourteenth Amendment to the Con-

stitution of the United States, in that, if enforced, it will deprive plaintiff of the equal protection of the law, and of its property without due process of law and without compensation therefor by depriving plaintiff of earnings sufficient to pay dividends or compensation upon its investment, to its said stockholders or otherwise, *as hereinbefore stated and also as hereinafter stated and set forth*, and said ordinance passed December 21st, 1906, if enforced, is in violation of Section 10 of Article 1, of the Constitution of the United States, in that it impairs the obligation of existing contracts between plaintiff and defendant, the City of Cedar Rapids, as hereinbefore set forth, and is in violation of Sections 18 and 21 of Article 1 of the Constitution of the State of Iowa, prohibiting the taking of private property for public use without compensation therefor first being made by due process of law and prohibiting any law or ordinance of any city impairing the obligation of contracts. The plaintiff also set forth that it had no adequate remedy at law and that the enforcement of said ordinance attempting to fix rates would produce great and irreparable injury to the plaintiff.

It is also alleged in said petition that the said proposed ordinance fixing rates for gas at 90 cents per thousand cubic feet passed December 21, 1906, if enforced, will at the rates therein specified work a reduction of more than 25 per cent of plaintiff's gross income and earnings from its patrons and will cause and require the plaintiff to operate its said plant and works at a loss to its self and to its stockholders, and will deprive the plaintiff of a reasonable income, and of any income upon the capital and money invested therein and the said ordinance is unreasonable, unjust, and oppressive.

Plaintiff prayed for a temporary writ of injunction restraining the said defendants and their agents from causing, authorizing or permitting the enforcement of said Ordinance No. 752, passed December 21, 1906, and from passing or publishing any other such ordinance purporting to regulate the

rates to be charged by plaintiff. A temporary writ was granted, and is still in force.

The case was tried before the District Court of Linn County, Iowa, sitting as a court of equity. A large amount of testimony was introduced, both by the plaintiff and the defendant as regards the value of the plaintiff's property, as regards the cost of manufacture and distribution of gas, and as regards the inclusion or exclusion of the value of certain of plaintiff's property in the value of the plant upon which it would be entitled to earn dividends. There was also a large amount of testimony introduced as regards the proper amount of depreciation to be charged off. The plaintiff's petition was dismissed by the District Court. The cause was appealed to the Supreme Court of Iowa, where the following errors were assigned and argued:

IN THE SUPREME COURT OF IOWA.
ERRORS RELIED UPON FOR REVERSAL.

1. The court erred in holding that if the appellant would receive, under the 90c ordinance, any compensation for the use of its property the ordinance is valid.

2. The court erred in holding that it did not constitute a taking of appellant's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

3. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

4. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per thousand cubic feet deprives appellant of a fair and reasonable return upon its property used in the service of the public.

5. The court erred in not holding that the ordinance is void, because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service.

6. Th court erred in not holding that the ordinance fixing the 90c rate is in violation of the Fourteenth Amendment to the Constiution of the United States, because it is a taking of private property for public use without due process of law.

7. The court erred in not holding that the ordinance is a violation of Section 18 of Article 1 of the Constitution of Iowa, because it is a taking of the private property of the appellant without just compensation.

8. The court erred in not holding that the ordinance fixing the rate of 90c is a violation of Section 21 of Article 1 of the Constitution of Iowa, and of Section 10 of Article 1 of the Constitution of the United States, because said ordinance impairs the obligations of contracts between the appellant and the City of Cedar Rapids.

9. The court erred in holding that the witnesses for appellee Bemis and Hall were qualified and competent as experts on the question of the cost of manufacture and distribution of gas.

10. The court erred in not finding from the whole of the evidence in the case that 90c per thousand cubic feet for gas would not enable appellant to earn fair and reasonable compensation upon its property.

11. The court erred in finding that the evidence fails to show that the rate of 90c per thousand cubic feet for gas fixed by Ordinance No. 752 is unjust and unreasonable.

12. The court erred in finding from the whole of the evidence that the ordinance fixing the 90c rate for gas is not confiscatory in its effect.

13. The court erred in finding that the rate of 90c per

thousand cubic feet for gas fixed by the orinance is just and reasonable.

14. The court erred in holding that the rate ordinance in controversy enabled appellant to earn fair compensation upon its property.

15. The court erred in dismissing appellant's petition and entering decree and judgment against appellant and in favor of appellees.

16. The court erred in refusing to hold that the ordinance fixing the rate for gas at 90c per thousand feet was a violation of the Fourteenth Amendment to the Constitution of the United States, because it deprives appellant of its property without due process of law and without just compensation, and denies to appellant the equal protection of the law.

The Supreme Court of Iowa affirmed the decision of the District Court, and at the time of suing out the writ of error herein, the plaintiff in error filed and served upon the defendant in error the following assignment of errors in this court:

ASSIGNMENT OF ERRORS ON WRIT OF ERROR FROM SUPREME COURT OF THE UNITED STATES TO SUPREME COURT OF IOWA.

Now comes the said plaintiff in error and respectfully submits that in the record, proceedings, decision and final judgment and decree of the Supreme Court of the State of Iowa, in the above entitled matter and cause there is manifest error in this, to-wit:

1. The court erred in holding that the provision of plaintiff's franchise granted by Ordinance No. 427 of the City of Cedar Rapids, Iowa, as follows:

"That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thous-

and feet and 20c per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption,"

did not constitute a contract, between the plaintiff and the City of Cedar Rapids, and in holding that the obligation thereof was not impaired by Ordinance No. 752, because said Ordinance No. 752 fixed the price of gas as follows:

"Sec. 1. Any person, firm or corporation supplying gas to the inhabitants of the City of Cedar Rapids, shall charge not to exceed ninety cents (90c) per thousand feet therefor, and no person, firm or corporation shall charge, exact or receive in excess of ninety cents (90c) per thousand feet for gas supplied by them to any inhabitant of said city,"

and thus destroyed the provision of the franchise allowing the plaintiff in error to charge such a rate as would admit of allowing to consumers a substantial discount on all bills for prompt payment. That said provision for discount for prompt payment of bills is a valuable contract right, the obligation of which is impaired by said Ordinance No. 752 and by the decision of the Supreme Court of Iowa holding the same to be valid, in violation of Section 10 of Article 1 of the Constitution of the United States.

2. The court erred in refusing to hold that, a contract existed between the City of Cedar Rapids and plaintiff permitting it to charge a sufficient rate to permit of a discount of 20c per thousand feet for prompt payment, and that the ordinance fixing the price to be charged for gas at 90c per thousand, without making provision for this discount was an impairment of the obligation of such contract and void as in violation of Section 10 of Article 1 of the Constitution of the United States.

3. The court erred in holding that because the plant was built up in part from and out of its previous earnings, that it was not entitled to earn and receive a fair return or any return upon the thus enhanced value of the plant at the time of fixing the 90c rate, the said holding in effect being the taking

of plaintiff's property for public use without compensation and without due process of law, in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

4. The court erred in finding the ordinance fixing the price of gas at 90c per thousand feet reasonable, by refusing to include as a part of plaintiff's property used in the service of the public, the item of eight thousand dollars of working capital, which it found was necessarily invested in the service of the public, the said holding in effect being the taking of said property without due process of law and without compensation.

5. The court erred in finding the ordinance fixing the price of gas at 90c per thousand feet reasonable by refusing to include as a part of plaintiff's property used in the service of the public one hundred thousand dollars on account of the item known as going value, which the said court expressly found was property, and part of the investment, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

6. The court erred in finding the ordinance in controversy valid, by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income, the item of valuation known as the Annex and being twenty thousand dollars worth of real estate, and in holding that the same was unnecessary as an investment in the said business, the said holding in effect being the taking of said property without due process of law and without compensation, in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

7. The court erred in finding that the said ordinance was reasonable and valid, by refusing to include as a part

of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income the item of valuation known as the old purifiers, the same being capital invested in the plant and withdrawn from the use of the stockholders, the said holding in effect being the taking of said property without due process of law and without compensation, in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

8. The court erred in finding the said ordinance in controversy to be reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public and upon which it was entitled to earn a reasonable income the item of valuation known as street mains, and in reducing the value of the street mains from that shown by the evidence, the said holding in effect being the taking of said property without due process of law and without compensation first being made therefor.

9. The court erred in finding the said ordinance valid by excluding the item of $5,000.00 known as the value of the high pressure main to the city limits and connected with the Marion system. The said exclusion of said valuation being a taking of said property without due process of law and without compensation therefor.

10. The court erred in finding the said ordinance in controversy reasonable and valid by refusing to include as a part of plaintiff's property used in the service of the public, and upon which it was entitled to earn a reasonable income the item of valuation known and designated upon the trial as "The Paving Over Mains," of $43,580. The said holding in effect being the taking of said item of property for public use without due process of law and without compensation therefor first being made.

11. The court erred in finding the said ordinance in controversy valid by excluding the item of property known and designated upon the trial as Engineering expenses, interest

on capital during construction and promotion, all of which items were proper in determining the present value of the said plant and the amount of plaintiff's investment in the service of the public, the said ruling in effect being the taking of so much of plaintiff's property for public use without due process of law and without compensation.

12. The court erred in excluding large items of plaintiff's specific property from consideration in determining the value of the plant, among the same being the cost of paving over mains, cost of high pressure main to city limits, value of real estate known as "Annex", going value of the plant, engineering, expenses, interest on capital, and organization expenses, and thereby found that the ordinance is reasonable, whereas, if it had included said property, which it should have included, it must have found the said ordinance unreasonable, and by thus excluding the said property the said finding in effect is a taking of plaintiff's said property so excluded from said valuation without due process of law and without compensation.

13. The court erred in holding said Ordinance No. 752 to be valid by excluding from the expense of operation of plaintiff's said gas plant and from the cost of manufacture and distribution of gas, the item of depreciation as testified to by witnesses for plaintiff in error, being more than 10c per thousand cubic feet per annum, and in substituting therefor a depreciation of 5c per thousand cubic feet per annum, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the Fourteenth Amendment to the Constitution of the United States.

14. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following item: For the year 1905, $5,627 for renewal of benches, which holding

was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the Fourteenth Amendment of the Constitution of the United States.

15. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following items: The interest on loans, amounting to $142.29 for the year 1905, and $866.17 for the year 1906; which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the Fourteenth Amendment to the Constitution of the United States.

16. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following items: Taxes on the "Annex" amounting to $175.60 for the year 1905, and $185.00 for the year 1906, which holding was in effect the taking of the property of the plaintiff in error without due process of law and without just compensation therefor being first made, in violation of the Fourteenth Amendment to the Constitution of the United States.

17. The court erred in holding said Ordinance No. 752 valid, by excluding from the expense of the operation of the said gas plant of the plaintiff in error, and the cost of the manufacture and distribution of gas, the following amounts charged off by the plaintiff in error on its books as depreciation:

1902	$ 7,291.53
1903	16,740.45
1904	8,833.52
1905	5,568.29
1906	7,669.18

the said several items being the difference between the depreciation charged off by the plaintiff in error on its books for each of said years and 5c per thousand cubic feet per annum of gas manufactured by the plaintiff in error, said 5c per thousand cubic feet depreciation being as testified to by the witness Hall, which testimony was received under objections, as set forth in assignments of error numbered 27, 28, 29 and 30.

18. The court erred in sustaining the said ordinance in controversy on the ground that plaintiff has an exclusive franchise and in holding that a lower rate would be and is reasonable because of the exclusive franchise, and the said ruling has the effect to deprive the plaintiff of its property without due process of law and without compensation.

19. The court erred in holding the said ordinance would afford plaintiff a reasonable income upon the property invested in the public service, by assuming that the said plant would earn large amounts under said ordinance in excess of what it was in fact earning as shown by the record and by including in its assumed earnings large items upon which and in support of which there was no evidence.

20. The court erred in holding that if the appellant would receive, under the 90c ordinance any compensation for the use of its property the ordinance is valid.

21. The court erred in holding that it did not constitute a taking of appellant's property without due process of law and without just compensation for the city to fix a rate so low that it does not afford a fair and reasonable income, or dividend on the actual value of the property used in the business.

22. The court erred in not holding that appellant is entitled to earn a fair and reasonable return upon the value of its property invested and used in the service of the public.

23. The court erred in not holding that the ordinance fixing the maximum price to be charged for gas at 90c per

thousand cubic feet deprives appellant of a fair and reasonable return upon its property used in the service of the public.

24. The court erred in not holding and finding that the ordinance is void, because if enforced it will deprive appellant of a fair and reasonable income or any income upon its property used in the public service.

25. The court erred in not holding and finding that the ordinance fixing the 90c rate in violation of the Fourteenth Amendment to the Constitution of the United States, because it is a taking of private property for public use without due process of law.

26. The court erred in not finding from the whole of the evidence in the case that 90c per thousand cubic feet for gas would not enable appellant to earn fair and reasonable compensation upon its property.

27. The record in the cause shows that James Hall, an expert accountant, having no knowledge of the gas business, testified as a witness for defendants in error, as to the value of the property of the plaintiff in error and the cost of the manufacture and distribution of gas, and as to the proper amount of depreciation to be charged off annually as a part thereof, all over the objections of plaintiff in error that said witness was not qualified and not competent to give such testimony, and that court erred in the admission of such testimony and giving weight thereto, thereby holding said 90c rate ordinance valid and depriving plaintiff in error of its property without due process of law and without just compensation, in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

28. Mr. James Hall, a witness for defendants in error and an accountant, examined the books of account of the plaintiff in error and produced as the report of said examination Exhibit K-2, as identified in the record. This exhibit, with the schedules attached purported to show the cost of manu-

facturing and distributing gas in Cedar Rapids, Iowa. It is based in part on data obtained from the books of plaintiff in error and in part on figures substituted by the witness which he says are in his opinion the proper figures. The depreciation charged off on the company's books was about 10c per thousand cubic feet per annum of gas manufactured. This amount was testified to as fair by several practical gas men. Mr. Hall substituted in place of this amount 5c per thousand cubic feet of gas manufactured per annum, and testified that in his opinion 5c per thousand cubic feet was the proper amount of depreciation. Mr. Hall testified he had no practical knowledge of the gas business. The plaintiff preserved objections to Mr. Hall's testimony on the ground that he was not qualified and competent to give an opinion as to depreciation of a gas plant and that his testimony, including said Exhibit K-2, was not competent; the same being mere opinions and conclusions of the witness as to matters of gas engineering and the practical operation of a gas plant, of which he had no knowledge.

The lower court erred in receiving and giving weight to such testimony, and holding on such testimony that the ordinance of the City of Cedar Rapids fixing the price of gas at 90c per thousand cubic feet was valid, and did not deprive plaintiff in error of its property without just compensation and without due process of law.

29. The court erred in admitting in evidence the statement of the witness Hall in said Exhibit K-2, as follows:

"Gas can be supplied to consumers of the City of Cedar Rapids at a price of 90c per thousand cubic feet, and at the same time the company have a profit sufficient to make a fair return upon its investment and leave a margin to guard against contingencies,"

over the objections of the plaintiff in error that the same was incompetent and that the witness was incompetent and not qualified, and in finding on such evidence that the ordinance of the said City of Cedar Rapids, fixing the price of gas at 90c

per thousand cubic feet was valid, thus depriving plaintiff in error of its property without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

30. Mr. Edward W. Bemis, a witness for the defendants in error, testified that he had no practical knowledge of the construction or operation of a gas plant, but that he had made a study of the cost of manufacturing and distribution of gas, having been employed as an expert witness in a number of cases. Mr. Bemis testified as follows:

"I have noticed the tables on Exhibit "K-2" showing the average cost of gas for five years at Cedar Rapids to be 64.04 cents per thousand cubic feet.

Q. What have you to say as to whether those figures are reasonable or unreasonable?

Objected to by plaintiff as incompetent and calling for an improper method of getting at the price of gas, and because the witness is not a practical gas man or engineer, but his knowledge is wholly theoretical, and the witness is not competent to testify as to the cost of gas. By agreement, this objection is to apply to all questions asked this witness as to the cost of gas.

A. Taking the operating expense as given by Mr. Hall for five years at 64.04 cents, then to that I add an allowance for bad debts if there is no discount for prompt payment. I take that at 8c, because such were the losses from bad debts of the Peoples Gas Company in Cleveland in 1905. The allowance for insurance and claims I have given it 93c, that being the experience of all the Massachusetts companies for the last three years as computed from the returns of sixty companies. The allowance for bad debts and insurance would make 1.73c, which, added to Mr. Hall's 64.04c would give a gross possible cost under the new ordinance of 65.77c. Then there are certain deductions that I have made, saving on office expenses of at least 2c, $2,000.00, saving on leakage of a possible 2c, saving on depreciation and repairs on manufacturing plant used for the making of gas for Marion 1-2c, or a total deduction of 4.5c; this from the gross cost would leave the net cost 61.27c, and that on the sales of 91,331,000 cubic feet would be a profit of $26,239.40, which would leave for possible dividends $22,489.40, after paying interest."

That the court erred in receiving the above evidence of the said witness over the objections of the plaintiff in error, and in giving weight to such evidence, and finding that gas could be manufactured and sold in Cedar Rapids at a cost of about 68.12c per thousand cubic feet, thus, in effect depriving the plaintiff in error of its property without due process of law and without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

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Attorneys and Counsellors for Plaintiff in Error.

By an examination of the said errors assigned in the Supreme Court of Iowa and this Court, it will appear that there are many legal questions to be determined in said cause by this court irrespective of the question as to whether or not this court inquires into the facts or not, as follows:

a. In view of the fact that the franchise of the plaintiff in error granted by the defendant in error, provided that the plaintiff in error might charge a price for gas and allow a discount of 20 cents per thousand cubic feet for prompt payment, and the fact that the ordinance fixing the price of gas at 90 cents per thousand cubic feet absolutely prohibits the plaintiff from having the benefit of said discount provision, the obligation of the contract between the city and the plaintiff in error is impaired. (See Assignment No. 1 made in this court. Also see Assignment No. 8 made in the Supreme Court of Iowa) the same being in violation of Section 10 of Article 1 of the Constitution of the United States. It will be noted, that under these assignments the plaintiff in error claims that the right granted in the franchise to the defendant in error to charge a price from which it might make a discount for prompt payment is a valuable contract right irrespective of the mere question of the reserve power of the city under the Statutes of Iowa to regulate the rates to be charged for gas.

b. The Supreme Court of Iowa, in effect, held that because the evidence showed that the plaintiff's plant was built up in part out of its previous earnings, it was not entitled to earn and receive a fair return or any return upon the thus enhanced value thereof, the same being in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

c. The Supreme Court of Iowa also erred, in not allowing as a part of the plaintiff's property used in the public service an item of $8,000 of working capital.

d. The Supreme Court also erred in not allowing as a part of the value of plaintiff's plant anything for the going value thereof.

e. The Supreme Court of Iowa also erred in not allowing the item of valuation known as the "Annex", being $20,000 worth of real estate, which it was conceded was acquired for the immediate future needs of the defendant.

f. The Supreme Court of Iowa also erred in excluding the value of certain items known as "Street Mains"; also in excluding an item of $5,000 known as the "Value of the High Pressure Main" to the city limits.

g. In determining the value of the plaintiff's plant, testimony showed without conflict that there was an item of "Paving over Mains" of $43,580 which would be necessary and reasonable in case of replacement, but that the Supreme Court erroneously excluded this item entirely.

h. The Supreme Court also erred in excluding the items of "Engineering Expenses", "Interest on Capital During Construction and Promotion".

i. The Supreme Court also erred in excluding an item of $5,627 for renewal of benches, which the evidence showed without conflict had been expended by the plaintiff in error, also in excluding other items amounting to large sums.

j. The Supreme Court also erred in disregarding the depreciation charged off by the plaintiff in error on its property, and making deductions therefrom for a period of five years of nearly $50,000, and in allowing the depreciation of only five cents per thousand cubic feet for gas manufactured and sold.

Whereas, if the said several items had been included by the court in the value of the plaintiff's plant and property, such value would have been such that on the findings and decision of the Supreme Court as to the proper rate to be charged for gas and the proper amount of depreciation, the earnings of the company on the capital invested would have been less than two per cent.

k. The Supreme Court of Iowa also erred in holding that the appellant is not entitled to earn a fair and reasonable return on the capital invested in its property used in the public service, the effect of such holding being simply that if the plaintiff in error was able to earn any income, however small, it was not entitled to relief.

II.

WILL THIS COURT EXAMINE INTO THE FACTS.

Section 709 of the Revised Statutes of the United States contains the following provision:

"The writ shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States."

Section 198 of the Code of Iowa relating to the Supreme Court, is as follows:

"The decisions of the court on all questions passed upon by it including motions and points of practice shall be specifically stated, and shall be accompanied with an opinion upon all such as are deemed of sufficient importance together with any dissent therefrom, which dissent may be stated with or

without an opinion, and all decisions and opinions shall be in writing and filed with the clerk, except that rulings upon motions may be entered upon the announcement book."

Under the federal statute above cited, it appears to us to be clear:

1. That this court will examine into the facts on a case brought here under writ of error to a state court, the same as if brought on appeal from the Circuit Court of the United States.

2. That this court will examine into the record made in the Supreme Court of Iowa, and will also examine the decision thereof for the purpose of ascertaining whether the writ of error properly raises any question determined by the state court adversely to a right or immunity under the Constitution or Laws of the United States, and specially set up and claimed by the party who brings the writ.

3. It is alleged in the petition that the 90c rate ordinance impairs the obligations of the franchise contract, which was granted to the plaintiff in error by the defendant in error, and under which it was operating, in that the franchise provided that the plaintiff in error might charge such a rate; that it could allow a discount therefrom of 10c per thousand cubic feet for payment of bills on or before the 10th of the month succeeding that in which the gas was used.

It appears from the undisputed evidence in the case, that this is a valuable contract right, and that it would cost the plaintiff in error about $5,000 per year to make its collections if the discount provision of the franchise is annulled, and it is perfectly clear that it *is* annulled by the ordinance in question, because the ordinance provides that the plaintiff in error shall not charge for gas either directly or indirectly in excess of 90c per thousand cubic feet, and no provision is made for a penalty or a price from which a discount may be made for prompt payment. It will, therefore, appear that aside from the question of the unreasonableness of the rate a question

presented to this court by this record under Section 10 of Article 1 of the Constitution of the United States.

4. As to whether or not questions arise in the case under the Federal Constitution cannot be determined by this court by an examination of a fragmentary portion of the record filed by the defendants in error in the Motion to Dismiss, but in order to determine that question, it seems that this court will look into the opinion of the Supreme Court of Iowa and the entire record which was presented to that court for the purpose of determining the existence of such questions, and even though this court should decline to enter upon a consideration of questions of fact there presented, this court will look into the entire record by way of throwing light on the findings.

5. This court has held in the case of Knoxville vs. Knoxville Water Company, 212 U. S. 1, that it will not be bound in a rate regulation case by the findings of a master, even though confirmed by the court below.

III.

DUE PROCESS OF LAW.

The city contends that inasmuch as the question of rates has been passed upon by the District and the Supreme Courts of the state, there has been due process of law, but "Due Process of Law" is not confined to the question as to whether the act complained of has been passed upon by any court or any number of courts. It has reference to the original act of taking property. In the instant case, there can be no controversy about due process of law, through a hearing or want of it in the courts, for in the act complained of there is no semblance of judicial process, but merely the arbitrary act of a city council fixing a certain rate.

If such rate is too low, it constitutes the taking of prop-

erty without due process of law and thus raises a federal question, to be decided ultimately by the federal courts.

Counsel for defendants in error cite and quote the case of Leeper vs. Texas, 35 L. Ed., 225, as follows:

"The law in its regular course of administration through courts of justice is due process, and when secured by the law of the state, the constitutional requirements are satisfied."

The inference evidently drawn by counsel is that administration through the courts of the *State* as contrasted with those of the United States is sufficient, even though a federal question be involved. Nothing of the kind is to be found upon reading the case. This case is a report of a criminal trial in which there were drawn in question judicial proceedings and whether or not they constituted due process of law. Of course, as was held in the case, if there was an administration of the law in its regular course through the courts of justice of the state, the constitutional requirements in regard to due process of law, were satisfied. The argument of counsel is confused by reason of the fact that in some cases the original act in itself concerns the judicial process, while in the instant case it concerns a legislative act preceding all judicial process. If the argument of counsel is correct, no case, although admittedly involving a federal question, could be taken to the United States Supreme Court, there to have settled the question of due process of law, if the act had been passed upon by the state tribunals.

The defendant in error quotes Davidson vs. New Orleans, 96 U. S. 97: "A most exhaustive judicial inquiry in which the meaning of the words 'Due Process of Law' as found in the fifth amendment resulted in the unanimous decision of this court that they do not necessarily imply a regular proceeding in a court of justice or after the manner of such courts". But in the instant case it is not a proceeding in a court of justice which is attacked as taking the property of the plaintiff in error without due process of law in fixing a confiscatory rate

for gas. The above mentioned cases and the others cited holding the same rule of law, have no application here.

In all cases of fixing rates, when the question arises as to whether or not property is taken without due process of law, the question is not alone as to whether it is judicial process, but whether or not the property is taken by an unremunerative rate, inasmuch as if the property is taken at all by means of unjust rates, it is unquestionably taken without due process of law. And it certainly would not be due process of law for a city council to fix an arbitrary and unremunerative rate for gas. So the very question involved and upon which the plaintiff in error is entitled to a decision of this court, is as to whether or not the rate fixed by the city council is so low as to be in violation of Section 1 of the Fourteenth Amendment to the Constitution of the United States.

IV

IS THIS A MOOT CASE?

The allegations and proof show that the plaintiff in error under a franchise granted by the City of Cedar Rapids, and in compliance with its provisions built, and at the time of the commencement of this suit was and still is operating a gas-plant at a value of about $400,000; that under its original franchise it charged and collected a net rate of $1.15 per thousand cubic feet for gas, and that on January 1st, 1907, the city claiming to act under the power conferred by Section 725 of the Code of Iowa, passed an ordinance fixing the rate for gas at 90c per thousand cubic feet, being a reduction of 25c per thousand cubic feet for gas sold and distributed by the plaintiff in error; that the plaintiff in error sold about One Hundred Million cubic feet of gas, and therefore, this horizontal reduction would amount to a diminuation in revenues to the plaintiff in error of about $25,000 per year; that the plaintiff in error in order to suspend the operation of said ordinance was obliged to bring this suit and file an injunction bond in the District Court of Iowa for the re-pay-

ment to consumers of the difference between 90c and $1.15, and when the case was appealed to the Supreme Court of Iowa, that court ordered the plaintiff in error to pay over to a trustee the said difference, the same to be held by said trustee until the termination of this litigation, and to be distributed by him to the consumers in case the ordinance is held to be valid, otherwise to be returned to the gas company, and yet defendants in error say that this is a moot case. See our Brief for further discussion of this point.

BRIEF.

I.

Two federal questions are raised by the pleadings:

1. Under Section 1 of the Fourteenth Amendment.
2. Under Section 10 of Article 1.

The only appellate jurisdiction which has ever been conferred by Congress upon the Supreme Court of the United States to review a judgment or decree in law or in equity of the highest court in the state, has been by writ of error.

Cohen vs. Virginia, 6 Wheaton, 264.

Verden vs. Coleman, 22 Howard (U. S.), 192.

Dower vs. Richards, 151 U. S. 658.

"The writ shall have the same effect as if the judgment or decree had been rendered or passed in a court of the United States."

Section 709 of the Revised Statutes of the U. S.

No particular form of words is necessary either in the pleadings or assignment of errors in this court to raise a question under the federal constitution. The true rule is that the court may be able to see clearly from the whole record

that a certain provision of the Constitution or Act of Congress was relied on by the party who presented the writ of error, and that the right thus claimed by him was denied.

Bridge Proprietors vs. Hoboken Land & Improvement Co., 1 Wallace, 16; 17 L. Ed., 571.

If it appears from the record, by clear and necessary intendment that a federal question must have been directly involved so that the state court might not give judgment without deciding it, that will be sufficient.

Powell vs. Brunswick County, 150 U. S., 440.

Sayward vs. Denny, 158 U. S., 180.

C. B. & Q. Rd. Co. vs. City of Chicago, 166 U. S., 226.

Greenbay Canal Co. vs. Paten Paper Co., 172 U. S., 58.

Dewey vs. Des Moines, 173 U. S., 199.

Citizens Savings Bank vs. Owensboro, 173 U. S., 644.

Vicksburg Water Works Co. vs. Vicksburg, 185 U. S., 65; 46 L. Ed., 808.

In this case the petition set out the original franchise; the amendment thereto; description of the plaintiff's property; detailed statement of its value and its earnings; the 90c ordinance; and specifically pleaded Section 1 of the Fourteetnh Amendment and Section 10 of Article 1 of the Constitution of the United States, as being violated by the ordinance in question.

II.

WILL THIS COURT EXAMINE INTO THE FACTS:

The decisions of this court in numerous cases, that on writ of error it will not re-examine into the facts passed upon by the state court, has no application here, because the question of reasonableness of rates is not merely one of fact, but

involves one of constitutional law. The point is well stated in: Hastings vs. Ames, 68 Fed., 726 at 728:m, as follows:

It has been suggested that the question which arises on these appeals is simply whether the rates prescribed by the Nebraska statute are unreasonable and unjust, and that this is not a constitutional question, but an ordinary issue of fact. It is true, no doubt, that the issue is one of fact; but a finding is required upon that issue solely for the purpose of deciding the ultimate question, which arises in the several suits, whether the state statute prescribing the rates is constitutional or otherwise. When the validity of a statute is challenged on the ground that it violates the organic law, it is ordinarily the case that the question can be determined by a simple inspection of the statute; but it may happen, as in the present case that it can only be determined in the light of extrinsic facts which serve to demonstrate the necessary effect and operation of the statute. Now, it matters not, as we think, how a decision in such cases is to be reached, whether it be by a simple comparison of the statute with those limitations upon legislative power which are imposed by the constitution, or by an investigation and decision of a preliminary issue of fact. If, in a given suit, the ultimate question involved is whether a state statute is void, either because it impairs rights that are guaranteed by the federal constitution or because the legislature of a state has assumed to exercise powers that have been surrendered to the general government, then the case is one which does not fall within the appellate jurisdiction of this court."

The Circuit Court of Appeals therefore held that the cases were not within the jurisdiction of that court, but were within the jurisdiction of the Supreme Court of the United States, as defined by the Act of March 3d, 1891, 26 Statutes, 826.

In the cases cited by counsel for defendants in error, the facts which the court declined to inquire into were not such as to require an examination thereof in order to determine the question as to whether the complainant had been deprived of its property without due process of law, while in a rate regulation case the whole question is as to whether the rate was reasonable and the facts must be examined to determine whether there has been a taking of property without due process of law.

Questions are presented on this record as to the competency and legal effect of the evidence considered by the Supreme Court of the State of Iowa, as bearing upon the question of the reasonableness of the rate, and under such circumstances this court will examine into the record to determine whether or not it gave the proper legal effect to the evidence bearing upon the question raised unde the Cdonstitution.

Dower vs. Richards, 151 U. S., 658; 38 L. Ed., 305.

In the case of Republican River Bridge Company vs. K. P. R. Company, 23 L. Ed., 515, Mr. Justice Miller stated the rule in these words:

"In Chancery cases or any other classes of cases where all the evidence becomes a part of the record in the highest court of the state, the same record being brought here, this court can review the decision of that court on both the law and facts so far as it may be necessary to determine the validity of the right set up under the Act of Congress. But in cases where the facts are submitted to a jury and are passed upon by the verdict in a common law case, this court has the same inability to review those facts in a case coming from the state court that it has in a case coming from the Circuit Court of the United States."

The case of Knoxville vs. Knoxville Water Company, 212 U. S., 1, is decisive on the question here presented. It is there held, as follows:

"At the threshold of the consideration of the case the attitude of this court to the facts found below should be defined. Here are findings of fact by a master, confirmed by the court. The company contends that, under these circumstances, the findings are conclusive in this court, unless they are without support in the evidence, or were made under the influence of erroneous views of law. We need not stop to consider what the effect of such findings would be in an ordinary suit in equity. The purpose of this suit is to arrest the operation of a law on the ground that it is void and of no effect. It happens that in this particular case it is not an act of the legislature that is attacked, but an ordinance of a municipality. Nevertheless the function of rate-making is purely legislative in its character, and this is true, whether it is exercised di-

rectly by the legislature itself or by some subordinate or administrative body, to whom the power of fixing rates in detail has been delegated. The completed act derives its authority from the legislature and must be regarded as an exercise of the legislative power. Prentis vs. Southern R. Co., 211 U. S., 210, ante, 67, 29 Sup. Ct. Rep., 67; Honolulu Rapid Transit & Land Company vs. Hawaii, 211 U. S., 282, ante, 55, 29 Sup. Ct. Rep. 55. There can be at this day no doubt, on the one hand, that the courts, on constitutional grounds, may exercise the power of refusing to enforce legislation, nor, on the other hand, that that power ought to be exercised only in the clearest cases. The constitutional invalidity should be manifest, and where that invalidity rests upon disputed questions of fact, the invalidating facts must be proved to the satisfaction of the court. In view of the character of the judicial power invoked in such cases it is not tolerable that its exercise should rest securely upon the findings of a master, even though they be confirmed by the trial court. The power is best safe-guarded against abuse by preserving to this court complete freedom in dealing with the facts of each case. Nothing less than this is demanded by the respect due from the judicial to the legislative authority. It must not be understood that the findings of a master, confirmed by the trial court, are without weight, or that they will not, as a practical question, sometimes be regarded as conclusive. All that is intended to be said is, that in cases of this character this court will not fetter its discretion or judgment by any artificial rules as to the weight of the master's findings, however useful and well settled these rules may be in ordinary litigation. We approach the discussion of the facts in this spirit."

It is true that case was an appeal from the Circuit Court of the United States, but inasmuch as the only method of bringing the case before this court for review of a decree of the Supreme Court of the State of Iowa is by writ of error, it seems that the statute above quoted is applicable and that the rule announced in the Knoxville Water case should apply.

In any event the court will look into the entire record by way of throwing light on the findings.

Egan vs. Hart, 165 U. S., 188.

Gross vs. United States Mortgage Co., 108 U. S., 477, in which this court said:

"We cannot, therefore, doubt that in the existing state of the law, it is our duty to examine the opinion of the Supreme Court of Illinois in connection with other portions of the record, for the purpose of ascertaining whether this writ of error properly raises any question determined by the state court adversely to a right, title or immunity under the Constitution or laws of the United States, and specially set up and claimed by the party who brings the writ, any difficulty existing upon this subject is removed by that provision of the revised statutes of Illinois, which requires not only that the justices of the Supreme Court of the state shall deliver and file written opinions in cases submitted to it, but that such opinions shall also be spread out upon the records of the court."

In the case of Buena Vista County vs. Iowa Falls Railroad, 112 U. S., 165, the decision of the Supreme Court was, in the cause brought before this court on a writ of error, not only examined but quoted by this court.

To the same effect is the case of Adams County vs. Burlington & Missouri Railroad Company, 112 U. S., 123.

It appears in this case from an inspection of the record and the decision of the Supreme Court of Iowa:

1. That the title, right, privilege, and immunity of the plaintiff in error was set up in the district court and urged and decided adversely to it in the Supreme Court of Iowa; that the attention of the Supreme Court of Iowa was specifically called to the provisions of Section 10 of Article 1 of the Constitution of the United States, and Section 1 of the Fourteenth Amendment to the Constitution of the United States, and that in the claims of the plaintiff in error were decided as to both propositions adversely to it.

2. It further appears from the record and opinion that the case was not and cannot be decided adversely to the plaintiff without determining the said federal questions. When this record is tested by the principles laid down in the case of Sayward vs. Denny, 158 U. S., 180, the writ of error herein should not be dismissed.

THE FRANCHISE IS A CONTRACT AND ITS ORLIGATIONS ARE IMPAIRED BY THE NINETY-CENT RATE ORDINANCE.

The powers reserved to the General Assembly over corporations are found in Section 1619 of the Code of Iowa, as follows:

"*Legislative Control.* The articles of incorporation, by-laws, rules and regulations of corporations hereafter organized under the provisions of this title, or whose organization may be adopted or amended hereunder, shall at all times be subject to legislative control, and may be at any time altered, abridged or set aside by law, and every franchise obtained, used or enjoyed by such corporation may be regulated, withheld, or be subject to conditions imposed upon the enjoyment thereof, whenever the general assembly shall deem necessary for the public good."

By Section 725 of the Code of Iowa, the general assembly granted to cities the power "to regulate and fix the rent or rate for water, gas, light, or power", and provided in the same section as follows: "and these powers shall not be abridged by ordinance, resolution or contract".

Section 720 provides that cities may grant to individuals or private corporations the authority to erect, and maintain water works, gas works, etc., for a term of not more than twenty-five years and may renew or extend the term of such grant.

Under the power conferred by Section 720 of the Code, the franchise of the plaintiff in error was granted, by the city, and under the authority conferred by Section 725 of the code, the ordinance fixing the rates for gas at 90c per thousand cubic feet was enacted. It will, therefore, be seen that the only power of the city which might not be abridged is the power to fix rates, so that the franchise of the plaintiff in error became a binding contract on the city, except only as to the matter of future regulation of the rates to be charged for gas.

In that franchise is a provision allowing the plaintiff in error to charge a rate from which a discount may be made for prompt payment. The ordinance in question passed under authority of Section 725, entirely abrogates that provision of the franchise, and it is therefore claimed by the plaintiff in error, that the said ordinance violates the obligation of its contract with the city in contravention of Section 10 of Article 1 of the Constitution of the United States.

One of the questions presented on this writ of error is as to whether or not the said contract, as is claimed by plaintiff in error, exists, and whether its obligation has been impaired by the 90c ordinance adopted by the city, and this court will examine the record and determine these questions for itself.

Houston, etc., Ry. Co. vs. Texas, 177 U. S., 77.

It is said in Walla Walla vs. Walla Walla Water Company, 172 U. S., 1; 43 L. Ed., at 345:

"* * * * *, but it is sufficient for the purpose of this case to say that this court has too often decided for the rule to be now questioned that the grant of a right to supply gas or water to a municipality and its inhabitants through pipes and mains laid in the streets, upon condition of the performance of a public service, and, after performance by the grantee, is a contract protected by the Constitution of the United States against state legislation to impair it. Citing:

New Orleans Gas Co. vs. Louisiana Light Co., 115 U. S. 650.

New Orleans Waterworks Co. vs. Rivers, 115 U. S., 674.

St. Tamany Waterworks vs. New Orleans Waterworks, 120 U. S., 64.

Crescent City Gas Light Co. vs. New Orleans Gas Light Co., 27 La. Ann., 138.

The court said: "State legislatures may not only exercise their sovereignty directly, but may delegate such por-

tions of it to inferior legislative bodies, as in their judgment is desirable for local purposes."

"We know of no case in which it has been held that an ordinance alleged to impair a prior contract with a gas or water company did not create a case under the Constitution and Laws of the United States".

The decision of the state court as to the validity of a state statute, which constitutes a contract alleged to be impaired by subsequent statutes is not binding on the federal courts.

McCullough vs. Virginia, 172 U. S., 102; 43 L. Ed., 382.

"It is the duty of this court to determine for itself the existence, construction, and validity of the alleged contract and also to determine whether as construed by this court, it has been impaired by any subsequent state legislation to which effect has been given by the court below."

Houston T. C. R. Co. vs. Texas, 177 U. S., 66 at 103, and cases cited.

Bank vs. Knoop, 16 Howard, 369.

Louisville, etc., Ry. Co. vs. Palmes, 109 U. S., 244; 27 L. Ed., 922.

A municipal ordinance passed under authority of the state is a law within the meaning of Article 1 of Section 10 of the Constitution.

New Orleans Water Works Co. vs. Louisiana Sugar Refining Co., 125 U. S., 31.

St. Paul Gas Light Co. vs. St. Paul, 181 U. S., 148.

III.

DUE PROCESS OF LAW.

The words "Due Process of Law" were intended to secure the individual from the arbitrary exercise of the power

of government unrestrained by the established principles of private rights and distributive justice.

Bank of Columbia vs. Okely, 4 Wheaton (U. S.), 235.

Hoover vs. McChesney, 81 Fed., 480.

Meyers vs. Shields, 61 Fed., 713.

A state enactment, or regulations under authority of a state enactment, establishing rates for the transportation of persons or property by railroad, that will not permit the carrier to earn such compensation as under ordinary circumstances is just to it, would deprive such carrier of its property without due process of law, and would therefore be repugnant to the Constitution.

Smyth vs. Ames, 169 U. S., 526-544.

A municipal ordinance fixing the rate of charge for gas at a price greatly less than the cost of manufacture and delivery of gas, is the taking of the company's property without due process of law.

Chicago, etc., Ry. Co. vs. Minnesota, 134 U. S., 418.

It is doubtless true that a state may act through different agencies, either by its legislative, its executive, or judicial authorities, and the prohibitions of the amendment extend to all actions of the state denying equal protection of the laws, whether it be the action of one of tnese agencies or another.

Virginia vs. Rives, 100 U. S., 313; 25 L. Ed., 667.

The provisions of Section 1 of the Fourteenth Amendment have reference to actions of the political body, denominated a state, by whatever instrumentalities, or in whatever modes that action may be taken. The state acts by its legislative, its executive, or its judicial authorities, and the provisions mean that no agency of the state or any of the officers or agents by whose acts its powers are exerted, shall deny to

any person within its juirisdiction the equal protection of the laws.

Missouri vs. Dockery, 191 U. S., 170.

Capital City Gas Co. vs. Des Moines, 72 Fed. Rep., 824.

IV.

IS THIS A MOOT CASE?

Courts of equity have jurisdiction to entertain a suit to declare null and voil a municipal ordinance, which impairs the obligations of the contract, or which deprives the complainant of his property without due process of law.

Los Angeles vs. Los Angeles Water Co., 177 U. S., 558.

Detroit vs. Detroit Citizens Street Ry. Co., 184 U. S., 368.

Vicksburg Water Works Co. vs. Vicksburg, 185 U. S., 65.

Cleveland vs. Cleveland City Ry. Co., 194 U. S., 518.

Walla Walla vs. Walla Walla Water Co., 172 U. S., 1.

The ordinance enjoined contains the following provision: (Defendant's Motion Page 14).

"Any person, firm, or corporation, shall upon conviction of a violation of this ordinance be punished by a fine of not less than Ten Dollars nor more than One Hundred Dollars."

So that an equity suit aided by injunction is the only remedy, which would protect the plaintiff in error from numerous fines, and much vexatious litigation with its customers. Besides, it is well settled that parties may apply to courts of equity for relief against threatened injuries.

Vicksburg Water Works Co. vs. Mayor and Aldermen of Vicksburg, 105 U. S., 65; 46 L. Ed., 808.

There is no court anywhere which has ever decided that before applying for relief against an ordinance or statute fixing a rate for gas or other commodity furnished by a public utility, that the utility must first obey the ordinance or statute for a season to determine by an actual trial whether or not it is deprived of its property without just compensation and without due process of law.

This court did, however, in the case of Wilcox vs. Consolidated Gas Co. of New York, 212 U. S., 19, say:

"Upon a careful consideration of the case before us we are of the opinion that the complainant has failed to sustain the burden cast upon it of showing beyond any just or fair doubt that the acts of the legislature of the state of New York are in fact confiscatory.

"It may possibly be, however, that a practical experience of the effect of the acts by actual operation under them might prevent the complainant from obtaining a fair return, as already described, and in that event, complainant ought to have the opportunity of again presenting its case to the court. To that end we reverse the decree with directions to dismiss the bill without prejudice, adn it is so ordered."

The Supreme Court of Iowa in the instant case, for the same reasons, dismissed the petition of the plaintiff in error without prejudice, but this ruling of the court does not establish the fact that he question presented is not a real one. The net price charged for gas at the time of the taking effect of the ordinance in question, January 1st, 1907, was $1.15 per thousand cubic feet, while the ordinance in question fixed the price at 90c.

The amount of gas distributed and sold by the plaintiff in error was approximately 100,000,000 cubic feet per annum.

This cause was tried in the District Court of Linn County, Iowa, and decided in January, 1908, and decided in the Supreme Court of Iowa in May, 1909. Pending the suit in the District Court, the plaintiff in error was required to give bond to repay to consumers the difference between 90c and the

amount $1.15 collected for gas, and pending the suit in the Supreme Court of Iowa the difference between 90c and the amount collected for gas was by an order of court impounded in the hands of a trustee to be distributed to the consumers in the event the ordinance is held valid, and to be returned to the gas company in the event the ordinance is held invalid. So it will be seen that a very substantial and considerable sum of money is involved in this suit.

If the contention of counsel for the defendants in error is correct, then if this suit should be determined adversely to the plaintiff in error, it could immediately begin another suit, and litigate the question as to the price of gas from January 1st, 1907, instead of from the date of the decision in the District Court or the Supreme Court of Iowa. It seems to us that the only purpose and effect of the action of the court in dismissing the petition without prejudice is to prevent the defendants in error from pleading the decision as *res adjudicata* in any future litigation that may arise under changed conditions over the validity of the ordinance fixing the price of gas at 90c per thousand cubic feet.

No ground of the Motion is well taken, and the plaintiff in error submits that it is entitled to have this case examined by this court on its merits.

Respectfully submitted,

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JOHN M. GRIMM,

Attorneys and Counsellors for Plaintiffs in Error.

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IN THE

Supreme Court of the United States

THE CEDAR RAPIDS GAS LIGHT COMPANY, PLAINTIFF IN ERROR

vs.

THE CITY OF CEDAR RAPIDS, ET AL., DEFENDANTS IN ERROR

OCTOBER TERM, 1918

No. 163

IN ERROR TO THE SUPREME COURT OF THE STATE OF IOWA

Case reported below as Cedar Rapids Gas Light Co. *vs.* The City of Cedar Rapids, et al., 120 N. W. Rep. 966; 144 Iowa 426.

REPLY BRIEF FOR PLAINTIFF IN ERROR

DIVISION I

As to the Motion to Dismiss

1.

CONTENTIONS OF THE DEFENDANTS IN ERROR ON THE MOTION TO DISMISS WRIT OF ERROR

Counsel for the defendants in error devote the first sixteen pages of their brief to the statement of additional reasons why the writ of error should be dismissed.

No purely technical grounds are raised in the motion as to the proper bringing of this case into this court on writ of error. But two broad grounds are relied upon, as follows:

First. That even though the plaintiff in error, throughout the entire proceedings in the state courts consistently and persistently urged that the enactment and enforcement of the ninety cent rate ordinance would deprive it of its property without just compensation and without due process of law, in violation of Section 1 of the 14th Amendment to the Constitution of the United States, and even though the Supreme Court of Iowa in holding said ordinance to be valid eliminated many large items from the value of the plaintiff's property, and many large items from the cost of the manufacture and distribution of gas, about the value and cost of which there is absolutely no dispute whatever in the evidence, still this court on a writ of error will not determine whether or not as a matter of law the Supreme Court of Iowa erred in excluding the said items and in thus arriving at a conclusion that the ordinance in question is not in violation of the constitutional rights of the plaintiff in error.

Second. That although Ordinance No. 427 (R. 8) enacted by the city granting the plaintiff in error the right to establish and maintain gas works in the city of Cedar Rapids is a contract, in so far as the right to use the streets is concerned, it is not a contract as regards the discount provision, and therefore the writ of error should be dismissed, because the discount provision was purely an obligation on the part of the company with no reciprocal obligations in reference thereto on the part of the city.

Upon these general grounds it is urged that the writ of error must be dismissed.

2.

This Case Falls Within the Provisions of Section 709, U. S. Statutes

1. If these contentions are correct, then a writ of error from this court to the highest court of the state is valueless in any case, as a means of securing a review by this court of decisions of the state courts involving questions under the Constitution, or statutes of the United States, but this court has never adopted any such restricted construction of its powers in cases brought here on writs of error. Even the case of

Knoxville Water Co. vs. Knoxville, 189 U. S. 434; 47 L. ed. 887,

relied upon by counsel for defendants in error, was brought into this court on writ of error to the Supreme Court of Tennessee.

2. The office of a writ of error to a state court is defined by Section 709 of the United States Statutes. The instant case comes clearly within this statute:

a. Because there was a final judgment and decree in the suit in the highest court of the State of Iowa in which a decision could be had.

b. Because there is drawn in question the validity of a statute of or an authority exercised under the State of Iowa (being the 90c rate ordinance) on the ground that the same is repugnant to the Constitution.

c. Because the decision of the Supreme Court of Iowa is in favor of the validity of said ordinance.

d. There was specially set up under Section 10 of Article I of the Constitution, and under Section I of the 14th Amendment thereto, the rights and privileges of the plaintiff in error, and in this case the judgment and decree of the Supreme Court of Iowa may be re-examined or reversed or affirmed upon writ of error. It is also provided in said Section 709 that the writ shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States.

e. It also affirmatively appears that these federal questions were presented for decision by the Supreme Court of Iowa, and that its decision thereof was actually necessary to a determination of the cause, and that the questions were actually decided.

f. It furthermore appears that the judgment and decree of the Supreme Court of Iowa could not have been given without deciding both these constitutional questions adversely to the plaintiff in error.

3.

IN WHAT CLASS OF CASES, QUESTIONS OF FACT WILL BE CONSIDERED ON A WRIT OF ERROR

It seems to be clearly settled that this court in an action at law at least has no jurisdiction to review the decision of the highest court of the state *upon a pure question of fact*, although a Federal question would or would not be presented according to the way in which the question of fact was decided.

Lewis vs. Campau, 3 Wall. 106.
Hall vs. Jordan, 15 Wall. 393.
Boggs vs. Mercid Min. Co., 3 Wall. 304.
Carpenter vs. Williams, 9 Wall. 785.
Creary vs. Devlin, 23 U. S. 511.
Republican River Bridge Co. vs. Kansas Pac. Rd. Co., 92 U. S. 315.
Martin vs. Marks, 97 U. S. 345.
Quimby vs. Boyd, 128 U. S. 488.
Dower vs. Richards, 151 U. S. 558.

But this is a suit in equity in which a trial was had de novo in the Supreme Court of Iowa, and the complaint here made against the decision of the Supreme Court of Iowa is not merely that its decision was erroneous as to the weight and sufficiency of the evidence to prove the facts, *but that the court erred in its decision as to the competency and legal effect of the evidence as bearing upon the questions arising under the Federal constitution*, and in such cases the decision and the facts will be reviewed by this court.

Mackay vs. Dillon, 4 How. 421.
Almonster vs. Kenton, 9 How. 1 to 7.
Morland vs. Page, 20 How. 522.
Dower vs. Richards, 151 U. S. 658.

It is said in *Dower vs. Richards*, 151 U. S. 658:

> "In 1803 Congress substituted an appeal from the Circuit Court to this court instead of a writ of error, in cases in equity and in admiralty, and upon such an appeal, the facts as well as the law were open to review in both those classes of cases until 1875 when the appeal in admiralty was restricted to questions of law."

It is provided by Section 699 of the Revised Statutes of the United States, that a writ of error may be allowed to review any final judgment at law, and an appeal shall be allowed from any final decree in equity hereinafter mentioned, without regard to the sum or value involved, and under the fourth subdivision of this section is set forth

that an appeal may be had from any final decree in equity of any Circuit Court or any District Court acting as a Circuit Court in a case on account of the deprivation of any right, privilege, or immunity secured by the Constitution of the United States.

It is held in:

Pennsylvania Mutual Life Ins. Co. vs. Austin, 168 U. S. 685; 42 L. Ed. 626.,

that where a suit is brought in a Circuit Court of the United States to enjoin the enforcement of certain ordinances of a city because they impaired the obligation of a contract, and were therefore in violation of the Constitution, the suit is appealable from the Circuit Court to the Supreme Court of the United States under the provisions of the Act of Congress of March 3, 1891.

This suit comes within the class named in this opinion, and if it had been brought in the Federal circuit court, would have been appealable directly to this court.

Under the provisions of Section 709 of the United States Statutes, that a writ of error shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States, and in view of the fact that the decision of the state court cannot be brought into this court on appeal, it would seem that in an equity case involving the reasonableness of a rate charged by a public utility, not only the law but the facts are open to review in this court.

When indeed, the question decided by the state court is not merely of the weight or sufficiency of the evidence to prove a fact, but of the competency and legal effect of the evidence as bearing upon a question of law, the decision may be reviewed by this court.

Dower vs. Richards, 151 U. S. 658 at page 667.

In *Mackay vs. Dillon*, 45 U. S. 421; 11 L. Ed. 1038, the court said that when it is sought to give effect to evidence for purposes which involve questions giving this court jurisdiction, then the decisions of state courts on the effect of such evidence may be fully considered here, and their judgments reversed or affirmed in a similar manner as if a like question had arisen in a supreme court of error in a state, when reversing the decision of inferior courts of original jurisdiction.

In *Republican River Bridge Co. vs. Kansas Pac. Rd. Co.*, 92 U. S. 315, Mr. Justice Miller said:

> "Where a right is set up under an Act of Congress in a state court any matter of law found in the record decided by the highest court in the state bearing on the right so set up under the act of Congress, can be re-examined here. In Chancery cases or in

> any other class of cases, where all the evidence becomes part of the record in the highest court of the state, the same record being brought here, this court can review the decision of that court on both the law and the fact so far as may be necessary to determine the validity of the right set up under the Act of Congress."

The above statement exactly covers this case except that the questions arise here under the Constitution.

The case at bar was tried *de novo* by the Supreme Court of Iowa, and its decree was rendered generally upon the whole record, and the Dower case recognizes the principle, that when a case is so decided, this court will review the decision of the state court on both the law and the facts.

The 7th Amendment to the Constitution prohibits the re-examination by this court of facts tried by a jury, and it is held in:

C. B. & Q. Ry. Co. vs. Chicago, 166 U. S. 226; 41 L. ed. 979,

that the 7th Amendment applies to jury trials in state courts, and the court says at page 243-4:

> "The terms of the Amendment are general and contain no qualification in respect of the restriction upon the appellate jurisdiction of the courts, except as to the class of cases, namely: suits at common law where the trial has been by jury. The natural inference is that no other was intended."

Therefore, this amendment has no application to a case in equity.

The question of reasonableness of rates is not merely one of fact, but involves one of Constitutional law.

In *Hastings vs. Ames*, 68 Fed. 726 at 728, the point is well stated, as follows:

> "It has been suggested that the question which arises on these appeals is simply whether the rates prescribed by the Nebraska statute are unreasonable or unjust, and that it is not a constitutional question, but an ordinary issue of fact. It is true no doubt that the issue is one of fact, but a finding is required upon that issue solely for the purpose of deciding the ultimate question which arises in the several suits, whether the state statute prescribing the rate is constitutional or otherwise."
>
> (Reference is here made to the Resistance to the Motion to Dismiss the Writ of Error, Division II, pages 27 to 31 inclusive).

The reasons for examining into the facts set forth in the case of

Knoxville vs. Knoxville Water Co., 212 U. S. 1,

have full application to the case at bar, and even if this court should not go to the extent of inquiring into the weight and sufficiency of the evidence, it should certainly determine the competency and legal effect of the evidence as bearing upon the constitutional questions involved, especially as regards the items as to the value of which there

was no dispute, but which were entirely eliminated by the Supreme Court of Iowa:

First. As to the cost of manufacturing and distributing gas, $14,908.71 per annum, as set forth on pages 70 and 71 of the Brief for plaintiff in error.

Second. As to the items entering into the value of plaintiff's investment in the business, as shown under Division 3, pages 112 and 113 of the Brief for plaintiff in error, amounting to $185,560.00.

If these items, or a considerable part of them, had been allowed by the Supreme Court of Iowa, the ninety cent rate ordinance could not have been sustained as furnishing a reasonable income upon the investment of the plaintiff in error.

4.

THE DISCOUNT PROVISION OF ORDINANCE NO. 427 CONSTITUTES A CONTRACT WHICH IS ABROGATED AND THE OBLIGATION OF WHICH IS IMPAIRED BY THE NINETY CENT ORDINANCE, AND THE POWER RESERVED TO THE CITY BY SECTION 725 OF THE CODE OF IOWA TO FIX RATES DOES NOT AUTHORIZE THE ABROGATION OF THE DISCOUNT PROVISION.

1. *Powers of Cities.*

Cities have no inherent jurisdiction to make laws or to adopt regulations of government. They are governments of enumerated powers acting by delegated authority, and are therefore different from state legislatures.

Keokuk vs. Scroggs, 39 Iowa 447.

Cities can exercise such powers as are expressly granted, and such implied ones as are necessary to make available the powers expressly conferred and essential to effect the purposes of the corporation, and these powers are strictly construed.

Keokuk vs. Scroggs, 39 Iowa 447.

Municipal corporations can possess and exercise the following powers and no others:

1st. Those granted in express words.

2nd. Those necessarily implied or necessarily incident to the powers expressly granted.

3rd. Those absolutely essential to the declared objects and purposes of the corporation.

Merriam vs. Moody's Executors, 25 Iowa 163.

Hanger vs. Des Moines, 52 Iowa 193.

Any doubt or ambiguity arising from the terms used by the legislature in a grant of power to a municipal corporation, must be resolved against the existence of the power and in favor of the public.

Clark vs. Davenport, 14 Iowa 494.
Merriam vs. Moody's Executors, 25 Iowa 163.
State vs. Smith, 31 Iowa 493.
Keokuk vs. Scroggs, 39 Iowa 447.
Logan vs. Pyne, 43 Iowa 524.
Brockman vs. Creston, 79 Iowa 587.
Becker vs. Keokuk Water Works, 79 Iowa 419.
Aldrich vs. Paine, 106 Iowa 461.
Cherokee vs. Perkins, 118 Iowa 405.

By making the grant to the plaintiff in error, the city gave it, what may be called, an additional franchise to the franchise authorizing its corporate existence, and like other franchises it constituted a contract between the parties having in general the same incidents, and subject to the same interpretation which would obtain between other contracting parties.

Cedar Rapids Water Co. vs. Cedar Rapids, Iowa, 118 Iowa at 239-40.

2. *Laws in force when Franchise was granted Plaintiff in Error.* Sections 471 and 473 of the Code of Iowa of 1873, are as follows:

> "Sec. 471. They [cities] shall have power to erect water works, or to authorize the erection of the same; but no such works shall be erected or authorized until a majority of the voters of the city or town at a general or special election, or four-fifths of the members of the council or board of trustees thereof, by vote, approve the same."
>
> "Sec. 473. When the right to build and operate such works is granted to private individuals or incorporated companies by said cities and towns, they may make such grant to inure for a term of not more than twenty-five years, and authorize such individual or company to charge and collect from each person supplied by them with water, such water rent as may be agreed upon between said person or corporation so building said works, and said city or town; and such cities or towns are authorized and empowered to enter into a contract with the individual or company constructing said works, to supply said city or town with water for fire purposes, and for such other purposes as may be necessary for the health and safety thereof, and to pay therefor such sum or sums as may be agreed upon between said contracting parties."

Chapter 11, of the Acts of the Twenty-second General Assembly of Iowa, is as follows:

> "Establishment of water-works, gas and electric light plants.
> "AN ACT to Amend Section 471 of the Code of 1873 Relating

to the Power of Establishing Water-works by Cities and Towns, and Making the Powers Granted in Sections 472, 473, 474, and 475 of the Code of 1873 Applicable to Establishment of Gas Works or Electric Light Plants and Providing for the payment of the same by the Issuing of Bonds.

"*Be it enacted by the General Assembly of the State of Iowa*:

"Section 1. That section 471 of the Code of 1873 be and the same is hereby amended by inserting in the first line thereof of after the word 'works' the following words: 'Or to establish and maintain gas works or electric light plants, with all the necessary poles, wires, burners and other requisites of said gas works or electric light plants.'

"Sec. 2. That sections 472, 473, 474, and 475 of the Code of 1873 shall be held to apply to the establishment and maintainance (maintenance) of gas works and electric light plants as fully as they do the erection of water works."

Section 3 relates to issuing bonds. Section 4 to submission to a vote of the question whether the city shall establish such works. Section 5 is a publication clause. Said Act took effect by publication April 12, 1888, signed Frank D. Jackson, Secretary of State.

In 1897 there was a general revision of the laws of Iowa, and the same was published as the Code of 1897. Section 720 of that code is in full, as follows:

> "Sec. 720. *Water or gas works—electric plants.* They [cities] shall have power to purchase, establish, erect, maintain and operatt, within or without the corporate limits of any city or town, waterworks, gas works or electric light or electric power plants, with all the necessary reservoirs, mains, filters, streams, trenches, pipes, drains, poles, wires, burners, machinery, apparatus and other requisites of said works or plants, and lease or sell the same. They may also grant to individuals or private corporations the authority to erect and maintain such works or plants for a term of not more than twenty-five years, and may renew or extend the term of such grant; but no exclusive franchise shall be thus granted, extended or renewed. No such works or plants shall be authorized, established, erected, purchased, leased or sold, or franchise extended or renewed, unless a majority of the legal electors voting thereon vote in favor of the same at a general or special election."

and is the codification of Sections 471 and 473 of the Code of 1873 and of the said Act of the Twenty-second General Assembly.

The franchise, Ordinance No. 427, became effective in 1896 before the said codification, therefore when the franchise was granted, Sections 471 and 473 as amended by the said Act of the said Twenty-second General Assembly was the law of the state in reference to the powers of the city to grant franchises, and this franchise is to be construed in connection therewith. The Twenty-second General As-

sembly, Chapter 16, granted cities additional powers which are substantially as defined in Section 725 of the Code of 1897.

3. *Correction of error in the Briefs as to the laws in effect at the time of granting the franchise, Ordinance No. 427.*

A statement has been inadvertently made in the Briefs to the effect that the portion of Section 720, quoted on page 16 of plaintiff's brief and page 4 of defendant's brief, was in force at the time of granting the franchise, Ordinance No. 427 (R. 8). On a re-examination of the statutes of Iowa, it appears that the above quoted sections of the Code of 1873 and of the Act of the Twenty-second General Assembly were in force at the time of granting said franchise, and that Section 720 in the form quoted first appeared in the Code of 1897.

4. *The city had no reserve power to abrogate the discount provision.*

The state has not by any legislation on the subject delegated to the municipal corporations it has created, any of the rights or powers reserved by Section 1619 of the Code.

Sioux City St. Ry. Co. vs. Sioux City, 78 Iowa at page 747.

In *City of Burlington vs. Burlington St. Ry. Co.*, 49 Iowa 144, the city granted to the railway company the right by ordinance to construct a double track railway in certain streets, and a track was laid down in the streets. Later the city adopted another ordinance providing that in no case should double tracks be laid in the streets unless future authority is conferred by an ordinance of the city. The railway company undertook to lay down a double track, and a suit was brought to enjoin it from so doing, and the court said:

> "The ordinance as adopted gave the defendant authority to lay the double track in controversy in this case. Under this authority the defendant spent large sums in the construction of a railway * * * *. The city cannot without the consent of the defendant change the terms of the contract entered into by the ordinance, nor abrogate nor nullify it. The amendment, therefore, which attempts to take from the defendant the right to lay a double track cannot have the effect intended, and will deprive defendant of no right guaranteed by the original ordinance."

It was urged that the city had the authority to amend the original ordinance under its police powers, but this the court denied, saying:

> "This police authority is not a despotic power that may be exercised without a sufficient public purpose."

In *City of Des Moines vs. C. R. I. & P. Ry. Co.*, 41 Iowa 569, the city had erected four toll bridges within its limits, and provided tolls

to be charged for horses, ox teams, etc. Later the city granted to the railway company the right to lay and maintain a track and railroad over one of these toll bridges under certain regulations, which did not provide for the payment of tolls. After the railroad had been built and operated for some years, the city passed an ordinance providing for the collection of tolls against the railway company in the sum of a dollar for each locomotive, and 50c for each passenger car, 25c for each box car, 40c for each baggage car, 15 for each flat car, and 10c for each hand-car. The railroad company refused to pay the tolls, and suit was brought to recover the same. The trial court found for the defendant, and the case was appealed to the Supreme Court, which said:

> "In our view the judgment of the circuit court was correct. We ground our conclusion upon the effect to be given the ordinance giving a right of way over the bridge. That ordinance was in effect a grant upon the conditions and the considerations of the compliance therewith, and of the regulations therein required. The grant was of the right to lay, and maintain a track of its railroad over and along the bridge and to operate the same subject to the regulations therein specified. The enumeration in the ordinance of what the grantee therein was required to do amounts to an implied negation, that anything further was to be done, or paid, for the privilege granted by the ordinance. The railroad company to whom the grant was made, or its assignee, having expended its money in order to comply with the regulations and conditions of the ordinance, granting the right, was entitled to enjoy the privilege granted, without being subject to any further obligations or burdens. This point has, in effect, been heretofore decided by this court in the case of the *State et al., vs. Herod*, 29 Iowa 123; see also the *Mayor, etc., of New York vs. Second Avenue Road Company*, 32 N. Y. 261."

In *Burlington & Henderson County Ferry Co. vs. Davis*, 40 Iowa 133, and in *Des Moines St. Ry. Co. vs. Des Moines B. G. St. Ry. Co.*, 73 Iowa, 513, the Supreme Court held that the grant of an exclusive franchise for a limited period, is valid. This was before the enactment of Section 720 of the Code of Iowa.

Let it be noted that the only power reserved to the city by Section 725 of the Code of Iowa is to fix the rent or rate for water, gas, light or power, and that this is the only power which shall not be abridged by ordinance, resolution, or contract. This reserve power like all other powers must be strictly construed, and it is therefore limited to the fixing of the rate to be charged for gas.

It is not claimed in this case, that the city had no power to regulate the rate to be charged for gas, because that power alone was reserved by Section 725 of the Code of Iowa. Therefore the claim of counsel for defendants in error, that the portion of the franchise granting

the right to a discount, and requiring it to be allowed is *ultra vires*, is without merit.

In *City Ry. Co. vs. Citizens St. Ry. Co.*, 166 U. S. 557; 41 L. ed. 1114, the city of Indianapolis had granted by ordinance the exclusive right to one street railway company to operate a street railway on its streets, and the city undertook to authorize another railway company to occupy the same streets. The court said:

> "All that is necessary to establish the jurisdiction of the court is to show that the complainant had or claimed in good faith to have a contract with the city, which the latter had attempted to impair. Conceding that the legislature alone had the right to make such grant, it may (as was observed in *Wright vs. Nagle*, 101 U. S. 791; 25 L. ed. 921) exercise its authority by contract, resolution, or through agencies duly established having power for that purpose. The grant when made binds the public and is directly or indirectly the act of the state * * * *. That the complainant had a contract with the city is entirely clear * * * *. It is true by Section 11 of the original act, a right was reserved to the General Assembly to amend or repeal at their discretion the act authorizing the incorporation of the street railway companies, but that was a right reserved to the General Assembly itself, and was never delegated, if in fact it could be delegated to the common council of the city * * * *. Whether the state had or had not impaired the obligation of this contract was not a question which could be properly passed upon on a motion to dismiss so long as the complainant claimed in its bill that it had that effect, and such claim was apparently made in good faith and was not a frivolous one.

New Orleans vs. New Orleans Water Co., 142 U. S. 79; 35 L. ed. 943.

This court said in *C. B. & Q. Ry. Co. vs. Cutts*, 94 U. S. 155; 24 L. ed. 94:

> "It is now too late to contend that the charter of a corporation is not a contract within the meaning of that clause of the Constitution of the United States, which prohibits the state from passing any law impairing the obligation of any contract. Whatever is granted is secured subject only to the limitations and reservations of the charter, constitution, or laws which govern it."

5.

THE DISCOUNT PROVISION IS THE LANGUAGE OF THE CITY. IT GRANTS A VALUABLE RIGHT AND THERE IS AN OBLIGATION ON THE PART OF THE CITY NOT TO DEPRIVE THE PLAINTIFF IN ERROR THEREOF.

The case of *Knoxville vs. Knoxville Water Co.*, 189 U. S. 434; 47 L. ed. 890, is readily distinguishable from the case at bar as to the point under consideration:

The Water Company there claimed the right to charge five cents per hundred gallons of water under the terms of the contract between the company and the city. The company was incorporated under a general act which provided that the act should not in any way interfere with or impair the police or general powers of the corporate authorities of the city, and such corporate authorities should have power by ordinance to regulate the price of water supplied by such company. The company in that case accepted its charter subject to these restrictions, being substantially the same reserve powers as are provided by Section 725 of the Code of Iowa to fix rates, and the point decided was that a provision in the contract fixing the maximum rate was subject to be changed by the city authorities under the reserve power. In discussing this provision of the contract, the court states, that in form the words of this instrument are the words of the company alone. In the case at bar, the language is the language of the city contained in an ordinance enacted by it, and the provision as to the maximum price for gas and the allowance for discount is mandatory. Section 3 thereof, is as follows:

> "That in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet, and twenty cents per thousand feet discount if consumers pay on or before the tenth of each month after consumption."

In Section 4 of the Ordinance is found in the following language the powers reserved by the city:

> "And (the company) shall at all times conform with and submit to any carry out any ordinance now in force or that may hereafter be enacted not inconsistent herewith for regulating or controlling the use of streets, avenues, and alleys by said company and said city shall at all times have the right for a failure on the part of said company to comply substantially with all the provisions of the foregoing sections, to forfeit this franchise and repeal this ordinance."

Thus it is provided that, if the company failed to allow the discount its charter might be forfeited.

These reserve powers have no reference to a change of the discount provision or even of the rate to be charged for gas, but under the provisions of Section 725 of the Code of Iowa, the city did have the reserve power to fix a reasonable rate.

The city having provided in its ordinance for the discount provision as an essential and valuable part of this franchise, assumed the reciprocal obligation on its part that it would not deprive the plaintiff in error of the benefit thereof. It might as well be said that

the city having granted the right to the occupancy of the streets, would have the power to take away that privilege.

Implied obligations of contracts come within the protection of Section 10 of Article I of the Constitution of the United States.

Stewart vs. Jefferson Police Jury, 116 U. S. 135; 29 L. ed. 588.
Burton vs. Koshkonong, 4 Fed. 377.
Carey Library vs. Bliss, 151 Mass. 364.

The state can no more impair the obligation of its own contracts, than it can the contracts of individuals.

Woodruff vs. Trapnall, 10 How. (U. S.) 207; 13 L. ed. 390.
Providence Bank vs. Billings, 4 Pet. (U. S.) 560; 7 L. ed. 955.
Green vs. Biddell, 8 Wheat. (U. S.) 92; 5 L. ed. 570.
Fletcher vs. Peck, 6 Cranch (U. S.) 127; 3 L. ed. 175.

A valid contract of a municipal corporation is just as sacred from legislative interference or construction as one of individual citizens.

Shinn vs. Cunningham, 120 Iowa 383.
People vs. Hall, 8 Colo. 485.
Erie vs. Griswold, 184 Pa. St. 435.
Atkins vs. Randolph, 31 S. W. 226.

The prohibition of the Constitution against the passage of laws impairing the obligation of contracts applies to the contracts of the state and to those of its agents acting under its authority as well as to contracts between individuals, and that obligation is impaired in the sense of the Constitution when the means by which a contract at the time of of its execution could be enforced, that is by which the parties could be obliged to perform it, are rendered less efficacious by legislation operating directly upon those means.

United States vs. Mayor of New Orleans, 103 U. S. 358; 26 L. ed. 395.
In the above case, the court quotes with approval the case of:
Van Hoffman vs. Quincy, 71 U. S. 403,

wherein it is said: "The obligation of the contract is the law which binds the parties to perform their agreement." In the instant case the plaintiff's agreement among other things, was to furnish gas at a price fixed and allow a discount for prompt payment, and the defendants' agreement was that it would not take away the discount provision from the plaintiff in error, and although the price might be changed under the reserve powers of Section 725 of the Code of Iowa, the discount provision could not be.

In the Knoxville case, cited, the court says:

> "We do not mean that under other circumstances words which on their face only express a limit might not embody a contract

more extensive than their literal meaning (citing *Detroit vs. Detroit Citizens St. Ry. Co.*, 184 U. S. 368; 46 L. ed. 592)."

And the court further says:

> "But in that case the rate was fixed by the ordinance which was the language of the city. The ordinance was under a statute which declared that the rates should be established by agreement between the city and the railway company, and neither statute nor ordinance reserved a power to the city to alter rates."

In the instant case neither Section 725 of the Code nor Ordinance No. 427 reserved a power to deprive the plaintiff in error of the benefit of the discount provision contained in its franchise.

Section 473 of the Code of 1873, as made applicable to gas works by the acts of the Twenty-second General Assembly, Chapter 11, Section 2, contains the provision that cities may authorize gas companies to charge and collect from each person supplied by them with gas such rent as may be agreed upon between said person or corporation sa building said works and said city or town.

In the case of *Detroit vs. Detroit Citizens St. Ry. Co.*, 184 U. S. 368; 46 L. ed 592, at page 388 of the original edition, it is said:

> "In the case at bar (the Detroit case) however, the rates are fixed under the provisions of a statute which declares that they shall be so fixed by agreement between the parties * * * *. It may very well be that language used by a legislature in merely conferring authority upon a company to fix certain charges for fares might not be regarded as amounting to a contract, when the same language used by parties in fixing rates under a legislative authority and direction to agree upon them would be regarded as forming a contract because the statute provided specially for that mode of determining them. Under such direction, we are of opinion the language used in the ordinances amounts to an agreement. * * * The rate of fare having been fixed by positive agreement under the expressed legislative authority, the subject is not open to alteration thereafter by the common council alone, under the right to prescribe from time to time the rules and regulations for the running and operation of the road. Nor does the language of the ordinance, which provides that the rate of fare for one passenger shall not be more than 5 cents, give any right to the city to reduce it below the rate of 5 cents established by the company. It is a contract which gives the company the right to charge a rate of fare up to the sum of 5 cents for a single passenger, and leaves no power with the city to reduce it without the consent of the company."

If it were not for the reserve power to fix rates contained in Section 725 of the Code of Iowa, the City of Cedar Rapids would under the decision in the *Detroit* case have no power whatever to change even the rate, and under the reasoning in the *Detroit* case, the city

certainly has no power to abrogate the discount provision of the franchise.

In *State vs. Laclede Gas Co.* (Missouri) 14 S. W. 974, page 980, the Supreme Court of that state, in passing upon the validity of an ordinance providing for a maximum price for gas with a discount for prompt payment, says:

> "Whatsoever the law necessarily implies in a statute ,or in a contract, is as much part and parcel thereof as if expressly stated therein. So that, by the terms of the charter of the respondent company, its right to fix the price of its product was as much a part of its charter as if it had been in terms set forth in Section 5 of the original act of incorporation. But if a price had thus been set forth, no one familiar with constitutional principles but would at once deny that the right to contract for the sale of gas at such price could anywise be impaired. For reasons already given, the result of the contract between the state and the respondent company was the same as if the state in granting the charter had set a price at which the respondent might make and vend gas, and then declared that the powers thus granted should be exempt from subsequent alteration, suspension, or repeal by the legislature."

The court cites and relies upon the case of

New Orleans Gas Co. vs. Louisiana Light Co., 115 U. S. 650; L. ed. 516,

and holds that the charter of the respondent company was a contract between it and the state, which authorized it to fix the price of gas which it should manufacture and which price could not be diminished by subsequent legislative action whether state or municipal; that the ordinance enacted by the city of St. Louis constituted a valid contract between the company and the city, and that it was beyond the power of the state or of the city to impair or in any way in any manner affect it. In that case, the maximum price for gas was $1.25 per thousand feet, and the discount provided for was five per cent on each thousand cubic feet. The ordinance held to be invalid fixed the price of gas at 90 or 95 cents per thousand cubic feet.

In the New Orleans case, supra, it is said in reference to the franchise that it is, quoting from *Delaware Railroad Tax*, 18 Wall 206; 85 U. S. 206; 21 L. ed. 888:

> "A contract between the state and its corporators is within the provision of the Constitution prohibiting legislation impairing the obligation of contracts." And therefore: "clearly protected from legislative interference whether the public be interested in the exercise of its charter or the charter be granted for the sole benefit of its corporators."

See also, *Greenwood vs. Freight Co.*, 105 U. S., 20; 26 L. ed., 964.

New Jersey vs. Yard, 95 U. S. 113; 24 L. ed., 354.

The granting of a franchise to a corporation is a contract with mutual considerations, and justice and good policy alike require that the protection of the law should be assured to it.

Birmingham vs. Birmingham, 3 Wall., 51; 7 U. S., 51; 18 L. ed., 137. See also, *West River Bridge Co. vs. Dix*, 47 U. S., 307; 12 L. ed., 535.

The discount provision abrogated by the 90c ordinance was not only of benefit to the company; it was also of benefit to the consumers of gas, and it was a ruthless act on the part of the city to abrogate it and to impose upon the company the expense required by the substitution of other means for the collection of its bills, and the trouble with its patrons, which would necessarily ensue from shutting off the gas if the bills were not promptly paid, which is really its only means of enforcing collection if the 90c ordinance is held to be valid.

6

ALLEGED WAIVER OF THE DISCOUNT PROVISION

It is claimed by counsel for defendants in error that because the company from time to time reduced the price of gas to its consumers, and proportionately reduced the amount of discount allowed, that it has waived all rights to claim the benefit of the discount provision of the ordinance. In view of the fact that the record shows without dispute, that the plaintiff in error always made use of the discount provision and never reduced the discount below ten cents per thousand cubic feet, we fail to see wherein the plaintiff in error has lost its right to the discount provision under any application of the doctrine of waiver. A waiver is the intentional relinquishment of a known right, and while in reducing the price of gas from time to time, the amount of the discount was practically correspondingly reduced, the discount provision to the extent of ten cents per thousand cubic feet has certainly not been waived. As well might it be said, that a person who has twenty bushels of wheat and who voluntarily and without consideration delivers over to his neighbor ten bushels of the wheat, thereby waives his right to ownership of the remaining ten bushels.

7

THE FRANCHISE ORDINANCE, NO. 427, IS NOT ULTRA VIRES, AND THE SUPREME COURT OF IOWA DID NOT CONSTRUE SECTION 725 SO AS TO MAKE IT SO, BUT MERELY CONSTRUED THE FRANCHISE CONTRACT SO AS TO ELIMINATE THE DISCOUNT PROVISION.

The obligation of the franchise contract, resting upon the city to

allow the plaintiff in error to have the benefit of the discount provision, was impaired by the 90c rate ordinance, and not by any construction of Section 725 of the Code, by the Supreme Court of Iowa.

The claim that the franchise, Ordinance No. 427 is *ultra vires* and void, in view of the provisions of Sections 471 and 473 of the Code of 1873 and of Section 720 of the Code of 1897 is entirely without merit. That the city had full authority from the General Assembly of Iowa to grant to the plaintiff in error the right to establish, maintain and operate gas works, and to vend gas and collect the price thereof, and fix the terms of said franchise and the conditions under which same shall be exercised is so clearly established by said statute, and so fully recognized by the decisions of the Supreme Court of Iowa, as to need no argument or presentation of authorities. The city had as full right under the provisions of Section 725 to fix the price of gas by the franchise, Ordinance No. 427, as it could be claimed to have to fix the price of gas by the 90c ordinance.

The Supreme Court of Iowa did not construe Section 725 of the Code as authorizing anything more than the fixing of rates by the city.

The Supreme Court of Iowa, however, did refuse to hold that the discount provision of the franchise contract, Ordinance No. 427 is protected by Article I, Section 10 of the Constitution of the United States, but as a Federal question is raised, this court is not bound by the construction of the contract by the Supreme Court of Iowa. The very point involved in this branch of the case is that the Supreme Court of Iowa mis-construed the contract, and refused to give effect to its plain provision in regard to the discount.

8

THE PLEADINGS RAISE THE QUESTION OF THE IMPAIRMENT OF THE OBLIGATION OF THE FRANCHISE CONTRACT.

It is also stated that no contract is alleged in the petition, but as shown by the Record, page 3, the plaintiff alleges:

> "That there is now a valid and subsisting contract by and between the City of Cedar Rapids and the plaintiff whereby the plaintiff is authorized and empowered to charge and collect the following rates, contained in said ordinance in the following language, to-wit: (Here is quoted Section 3 of the Ordinance.)"

It is further alleged in the petition, that said ordinance passed, December 21st, 1906, if enforced, is in violation of Section 10 of Article I of the Constitution of the United States, in that it impairs the obligations of existing contracts between the plaintiff and defendant, the city of Cedar Rapids, as hereinbefore set forth. (Record, page 6.)

The said Ordinance No. 427 (Record, page 8), is made a part of the petition, as exhibit "B," by allegation (Record, page 2).

DIVISION II

REPLY TO ARGUMENT OF THE DEFENDANTS IN ERROR ON THE MAIN CASE

1

AS TO THE STATEMENT OF FACTS

The facts set out by counsel for plaintiff in error in the Brief are all sustained by references to the Record, and counsel for the defendants in error fail to point out wherein any statement of fact in the Brief for plaintiff in error is erroneous.

Counsel for defendants in error then set out a history of the organization of the company in great detail, which we deem to be quite immaterial to this case, for even though the works were built in part out of the proceeds of a bond issue and out of the earnings of the company, and even though the stock might not have been worth par when issued, yet the question before the court is as to the value of the property of the plaintiff in error devoted to the business at the time of the enactment of the rate ordinance, as shown by authorities cited in the Brief for plaintiff in error, pages 84 and 85, and it is immaterial in what manner the property was lawfully acquired. (Authorities cited Par. 7, Brief page 85).

2

VALUATION OF THE PROPERTY

The plaintiff in error has so fully covered the subject of the value of the plaintiff's property in the main Brief, pages 34 to 48 inclusive, pages 83 to 93 inclusive, and pages 112 and 113, that it is not considered necessary or advisable to enter into a re-discussion of these questions. Suffice it to say that counsel for defendants in error have failed to point out the testimony sustaining the deductions which it claims should be made from valuation other than those discussed by the plaintiff in error.

3

THE MATTER OF THE VALUATION FOR ASSESSMENT PURPOSES

It has never been held by any court that on a question as to the value of any property, a party is concluded by the value placed thereon by him for assessment purposes. It is well known that no property is

assessed at its full value, and that it is customary for city councils to exempt large numbers of manufacturing institutions from the payment of city taxes. It is shown by the Record that the assessment set out (R. 270-1) was for the years 1903-4-5. The assessment of the plaintiff's property for the year 1907 was placed at $260,000 (R. 152).

4

MR. HALL'S COST OF GAS

The statement on page 24 of the Brief for defendants in error to the effect that Mr. Hall found the cost *to the company* of manufacturing gas at an average of 64.04c per thousand cubic feet for five years, is not in accordance with the fact in this particular. Mr. Hall says (R. 604) that in arriving at the average cost of gas of 64.04c per M. c. f. as stated, he eliminated from the cost of gas as computed by the plaintiff many items amounting in all to approximately $15,000 per annum.

5

INCOMPETENT TESTIMONY QUOTED

R. S. Fuertardo, whose alleged testimony is quoted in the Brief for defendants in error, page 25, was not a witness in the case, but a report which he made to the city council, Exhibit F (R. 407), was a part of the published proceedings of the city council of the city of Cedar Rapids (R. 508). This exhibit was offered in evidence on the cross-examination of Glenn M. Averill (R. 508), (simply for the purpose of showing that an investigation had been made by the city before passing the 90c rate ordinance), who testified (R. 163) that he knew such a report had been made to the city but did not know what information it contained. Exhibit "F" was offered in evidence (R. page 259) by the defendants in error, and objected to by the plaintiff as incompetent, irrelevant and immaterial.

This man never examined the books of the plaintiff in error, and no opportunity was given for cross-examining him. What fair-minded person would claim for a moment that Mr. Fuertardo's report has any probative weight in this case, except possibly to show the fact an investigation was made by the city prior to the adoption of the rate ordinance? This report made to the city is certainly no proof in this case as to the cost of the manufacture and distribution of gas, and was certainly not competent as evidence in relation thereto.

6

THE TESTIMONY OF THE WITNESSES HALL AND BEMIS

The testimony of the witnesses Hall and Bemis, as to the cost of the

manufacture of gas, is quoted by counsel for the defendants in error, but it is insisted by the plaintiff in error that these witnesses were not competent. (See Brief, pages 101 to 106 inclusive). Whether these witnesses were competent and whether their testimony was competent, is a eFderal question. Under well established rules of law, the testimony of these witnesses is not competent. (See Brief, pp. 101 to 106).

7

IS THIS A MOOT CASE?

In reply to the claim that this is a moot case, the plaintiff in error refers the court to the argument on that question found on pages 36 to 38 of the Resistance to the Motion to Dismiss the Writ of Error.

In addition to the argument there presented, the court's attention is called to the following facts found in the Record:

The net price charged for gas at the time of the taking effect of the ordinance in question, January 1st, 1907, was $1.15 per thousand cubic feet (R. 150), while the ordinance in question fixed the price at 90c per thousand cubic feet.

The amount of gas distributed and sold by the plaintiff in error was approximately one hundred million cubic feet per annum, as found by the Supreme Court of Iowa (R. 648.)

The enforcement of the ordinance was restrained by injunction in the District Court of Linn County, Iowa.

This case was commenced December 24th, 1906. The approximate difference between 90c and $1.15 on the sales amounts to $25,000 per annum, which for five years amounts to $125,000.

On the 19th day of February, 1908, the Supreme Court of Iowa entered an order requiring the difference between 90c per thousand cubic feet and $1.15 per thousand cubic feet net, to be impounded in the hands of E. M. Scott, as Trustee, to abide the termination of the suit, and on May 4th, 1909, the Supreme Court of Iowa entered an order continuing said restraining order, and the previously granted restraining orders in force, until the final determination of this cause in the Supreme Court of the United States, or antil it is otherwise ordered by said court or a Justice thereof. (R. 654-5-6). So that it appears that there is a very substantial sum of money involved in the determination of this suit, and the mere fact that the Supreme Court of Iowa modified the decree of the District Court in the following language: (R. 656).

> "It is ordered, adjudged, and decreed, that the dismissal of said petition is without prejudice to the right of the plaintiff to maintain an action in the future to restrain the enforcement of said ordinance, if after the same has been put in operation and given

> a fair test it is found to deprive plaintiff of a fair return upon its investment,"

does not make a moot question, because the decision of the Supreme Court of Iowa is final on the case made and only protects the plaintiff in error from the claim which might be made if it should begin a suit in the future that the decree is *res adjudicata*.

If the writ of error is dismissed, or the decision of the Supreme Court of Iowa is affirmed, the money in the hands of the Trustee will be distributed to the consumers, and they will recover back from the company all paid by them in excess of 90c per thousand cubic feet, and the company will in that event have received only 90c per thousand cubic feet for the gas sold by it since the first of January, 1907. Unless the rate ordinance is set aside in this suit it will take effect and be legal and binding until set aside in future litigation after a "fair trial" thereof, and therefore so far as affording the plaintiff in error any remedy for the recovery from consumers of the difference between 90c per thousand cubic feet and a fair rate, the decision allowing the company to litigate the matter in the future grants a barren right.

It is now over five years since the 90c rate ordinance was adopted, and there has been ample time to demonstrate the earnings of the company under the ordinance. All consumers have known that if the ordinance is held to be valid, they will recover back the money paid by them in excess of 90c per thousand cubic feet. So to all intents and purposes, so far as the consumers are concerned, the ordinance has been in effect and on trial for over five years. In view of the fact that it would be gross injustice to the plaintiff in error, which a court of equity never countenances or permits, to compel it to furnish gas to consumers at 90c per thousand cubic feet during five years, at less than a fair and reasonable price, the plaintiff in error ought not to be required to institute new proceedings after further trial of the ordinance, and to lose the income during said time, to which it is justly entitled, if the 90c rate is unreasonably low.

The logic of the conclusion of the court, that: "Plaintiff in error ought not to be deprived of the opportunity of again presenting the matter in court," is that it should have the benefit of a fair rate from the time of the adoption of the ordinance, and not from the time of the institution of new proceedings. In this case if the court holds that the showing on the past experience of the company is not sufficient to warrant the setting aside of the rate, and a test is required, it would seem to be only fair to remand the case, in order that the question of the reasonableness of the rate may be determined upon the experience of the company during the past five years, for unless this is done, if it should develop that on the experience of the company it would not

receive a fair return on its investment at the 90c rate, the company would have no means of redress as against the consumers to recover the difference:

First. Because it would be impractical, and would involve endless litigation.

Second. Because during the time that the company put in effect the new rate, recognizing the validity of the ordinance establishing it, it would be estopped from claiming or recovering from consumers anything in excess of the 90c rate, no matter how much it may have lost thereby.

8

MISCONCEPTION OF COUNSEL FOR DEFENDANTS IN ERROR AS TO DISCOUNT PROVISION.

On page 45 of the Brief for defendants in error, counsel seem to be confused as to the position of the plaintiff in error in regard to the discount provision. It is conceded that so far as the mere rate is concerned, the only question involved is as to whether it is reasonable or not, but it is claimed by the plaintiff in error, that the discount provision is separate and apart from the rate; that it is a valuable right as a means not only of saving expense in the collection of its bills, but in maintaining amicable relations with its patrons, and the complaint made on this branch of the case is: that the rate ordinance 752 (R. 9) entirely eliminates the discount provision which was a part of the contract, and thus impaired the obligation of the contract.

The questions on this branch of the case, are:

First. Is the discount provision a part of the franchise granted, and is it a valuable right,

Second. Did Ordinance No. 752 deprive the plaintiff in error thereof?

On a careful examination of the record in this case, it would seem that both questions must be answered in the affirmative, and therefore the Supreme Court erred in holding the ordinance to be valid.

It is submitted that the motion to dismiss the writ of error should be over-ruled, and that the plaintiff in error is entitled to a reversal of the case.

Respectfully,

James H. Tarvin

Solicitor for Plaintiff in Error.

because it is too low to permit a further reduction in the way of discount for cash payment.

The state court having treated a public utility corporation fairly as to value of plant depreciation, and found that the net returns would exceed six per cent, and given it leave to try the case again after the legislative rate had been in effect, this court does not feel warranted in reversing on the ground that the rate is confiscatory because in some details this court might have treated the corporation differently.

144 Iowa, 426, affirmed.

THE facts, which involve the validity, under the contract and due process provisions of the Constitution of the United States, of an ordinance of the City of Cedar Rapids, Iowa, fixing the price of gas at ninety cents per thousand cubic feet, are stated in the opinion.

Mr. James H. Trewin, with whom *Mr. John N. Hughes* and *Mr. John M. Grim* were on the brief, for plaintiff in error:

There is no conflict in the evidence as to the value and efficiency of the discount provision of the franchise. The ordinance granting the plaintiff in error a franchise is a contract. *Water Co.* v. *Cedar Rapids, Iowa*, 118 Iowa, 234; *Dartmouth College Case*, 4 Wheat. 518.

An unconditional grant by a State constitutes a contract, which is entitled to protection under the Constitution just as fully as a grant made by an individual. *Fletcher* v. *Peck*, 6 Cr. 87; *Sinking Fund Cases*, 99 U. S. 700, 719; *New Orleans Water Co.* v. *Rivers*, 115 U. S. 674, 681; *People* v. *O'Brien*, 111 N. Y. 1; 18 N. E. Rep. 692.

Plaintiff in error cannot provide for a discount below ninety cents and earn any return on its property whatever. It is, therefore, deprived by the ordinance of the discount provision contained in its franchise. The company cannot impose a penalty for the violation of one of its regulations, nor refuse to furnish gas on the failure of the consumer to pay the penalty. *Shepard* v. *Milwaukee*

Gas Co., 70 Am. Dec. 479; 6 Wisconsin, 539; *Williams* v. *Mutual Gas Co.*, 18 N. W. Rep. 236; *Harbison* v. *Knoxville Water Co.*, 53 S. W. Rep. (Tenn.) 933; *Gas Light Co.* v. *Colliday*, 25 Maryland, 1; *Webster* v. *Nebraska Tel. Co.*, 22 N. W. Rep. 239; *Tacoma Hotel Co.* v. *Light & Water Co.*, 28 Pac. Rep. 517; *Shires* v. *Ewing*, 29 Pac. Rep. 320; *Railroad Tax Cases*, 13 Fed. Rep. 756; *Detroit* v. *Plank Road Co.*, 43 Michigan, 140; *Commonwealth* v. *Essex Co.*, 13 Gray, 239; *Railroad Co.* v. *Maine*, 96 U. S. 499; *Sinking Fund Cases*, 99 U. S. 700.

Whatever is plainly granted cannot be taken from the parties entitled thereto by such legislative enactments. *Minneapolis* v. *Street Ry. Co.*, 215 U. S. 417; *Detroit* v. *Citizens' Street Ry. Co.*, 184 U. S. 368.

The city had no reserved power to abrogate the discount provision. *Sioux City St. Ry. Co.* v. *Sioux City*, 78 Iowa, 747; *Burlington Street Ry. Co.*, 49 Iowa, 144; *Des Moines* v. *C., R. I. & P. Ry. Co.*, 41 Iowa, 569; *Burlington & Henderson County Ferry Co.* v. *Davis*, 40 Iowa, 133; *Des Moines St. Ry. Co.* v. *Des Moines B. G. St. Ry. Co.*, 73 Iowa, 513; *City Ry. Co.* v. *Citizens' St. Ry. Co.*, 166 U. S. 557; *New Orleans* v. *New Orleans Water Co.*, 142 U. S. 79; *C., B. & Q. Ry. Co.* v. *Cutts*, 94 U. S. 155.

The discount provision, which is the language of the city, grants a valuable right of which plaintiff in error cannot be deprived. *Knoxville* v. *Water Co.*, 189 U. S. 434, distinguished.

Implied obligations of contracts come within the protection of § 10 of Art. I of the Constitution. *Stewart* v. *Jefferson Police Jury*, 116 U. S. 135; *Burton* v. *Koshkonong*, 4 Fed. Rep. 377; *Carey Library* v. *Bliss*, 151 Massachusetts, 364.

The State can no more impair the obligation of its own contracts, than it can impair the contracts of individuals. *Woodruff* v. *Trapnall*, 10 How. 207; *Providence Bank* v. *Billings*, 4 Pet. 560; *Green* v. *Biddle*, 8 Wheat.

CEDAR RAPIDS GAS LIGHT COMPANY *v.* CITY OF CEDAR RAPIDS.

ERROR TO THE SUPREME COURT OF THE STATE OF IOWA.

No. 163. Argued February 29, 1912.—Decided March 11, 1912.

Where the general power reserved to regulate rates is only limited by the Fourteenth Amendment, no franchise contract will be presumed to imply that the municipality under its reserved right to regulate rates must only reduce them to such a point that there will be a margin to allow a discount for prompt payment.

A municipal ordinance drawn in form of a contract to be accepted by the franchisee, when accepted becomes a contract and is subject to the reserved powers of the municipality as limited by the laws of the State.

The practice and decisions of this court are that § 709 Rev. Stat. does not give to a writ of error to the state court in a chancery case the effect of an appeal from a judgment in such a case in the Federal courts and open the evidence for reëxamination in this court.

Findings of the state court in cases either at law or in equity may depend upon questions that are reëxaminable in this court, which, if properly saved, must be answered; and this court may examine the evidence in so far as necessary to do so in respect to rulings within the appellate jurisdiction of this court. *Kansas City Southern Railway* v. *Albers Commission Co.*, *ante*, p. 573.

Quære: Whether a legislative rate, not in itself too low, is confiscatory

92; *Fletcher* v. *Peck*, 6 Cranch, 127; *Shinn* v. *Cunningham*, 120 Iowa, 383; *People* v. *Hall*, 8 Colorado, 485; *Erie* v. *Griswold*, 184 Pa. St. 435; *Atkins* v. *Randolph*, 31 S. W. Rep. 226; *United States* v. *Mayor of New Orleans*, 103 U. S. 358; *Von Hoffman* v. *Quincy*, 4 Wall. 535; *Greenwood* v. *Freight Co.*, 105 U. S. 20; *New Jersey* v. *Yard*, 95 U. S. 113.

The granting of a franchise to a corporation is a contract with mutual considerations, and justice and good policy alike require that the protection of the law should be assured to it. *Birmingham* v. *Birmingham*, 3 Wall. 51. See also *West River Bridge Co.* v. *Dix*, 6 How. 507.

The ninety cent rate ordinance abrogates the sliding scale of prices for gas. It is lawful and proper to make lower rates to large consumers based on a sliding scale available to all. *Skillman* v. *Board*, 152 N. Y. 327; *Wagoner* v. *Rock Island*, 146 Illinois, 139; *Brunswick Elec.* v. *Maine Water Co.* (Me.), 59 Atl. Rep. 537; *Robbins* v. *Bangor, &c.*, 1 L. R. A. (N. S.) 962; *Wilson* v. *Tallahassee Water Co.* (Fla.), 36 So. Rep. 63.

The ordinance takes plaintiff's property without just compensation and due process of law. The evidence shows that the ninety cent rate would not enable plaintiff to earn fair and reasonable compensation upon its property.

The basis of all calculations as to the reasonableness of the rates to be charged by a corporation furnishing gas to the public is the fair value of the property being so used at the time of fixing the rate. *Willcox* v. *Gas Co. of New York*, 212 U. S. 19; *Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1; *Atlantic Coast Line* v. *Nor. Car. Corp. Com.*, 206 U. S. 1; *Stanislaus County* v. *Irrigation Co.*, 192 U. S. 201; *San Diego Land Co.* v. *Jasper*, 189 U. S. 439; *Minneapolis & St. Louis Rd. Co.* v. *Minnesota*, 186 U. S. 257; *Vicksburg Water Co.* v. *Vicksburg*, 185 U. S. 82; *San Diego Land Co.* v. *National City*, 174 U. S. 739; *Smyth* v. *Ames*, 169 U. S. 547; *Covington Turnpike Co.* v. *Sandford*, 164 U. S. 578; *Cotting*

v. *Kansas City Stock Yards*, 183 U. S. 79; *Reagan* v. *Farmers' L. & T. Co.*, 154 U. S. 363; *Spring Valley Waterworks* v. *San Francisco*, 124 Fed. Rep. 574; *Southern Pac. Rd.* v. *R. R. Commissioners*, 78 Fed. Rep. 261; *Memphis Gas & Lt. Co.* v. *Memphis*, 72 Fed. Rep. 952; *Brunswick Water Dist.* v. *Maine Water Co.*, 99 Maine, 371; *Water Co.* v. *Cedar Rapids*, 118 Iowa, 234; Lewis on Eminent Domain, §§ 462, 477; *Metropolitan Trust Co.* v. *Houston*, 90 Fed. Rep. 683.

It is the market value that is to be ascertained and considered as the fair value of the property. *Henry* v. *Dubuque & Pac. Ry.*, 2 Iowa, 300; *Steenerson* v. *Great Northern Ry.* (Wis.), 72 N. W. Rep. 715; Beale & Wyman, R. R. Rate Reg., § 355.

The owner of property devoted to a public use is entitled to the benefit of any appreciation in value above the original cost, and cost of improvements, which is due to good management, or any natural causes. Cases *supra; Detroit* v. *Detroit H. & P. Co.*, 43 Michigan, 140.

The value of the plant is the fair value for which it might be sold to any other corporation or investor and its original cost or cost of reproduction. *Smyth* v. *Ames*, 169 U. S. 524; *San Diego* v. *Jasper*, 189 U. S. 439; *Ames* v. *Union Pacific*, 64 Fed. Rep. 165; Beale and Wyman, R. R. Rates, § 255; *Steenerson* v. *Great Northern Ry.*, 72 N. W. Rep. 715.

It is immaterial in what way the property was lawfully acquired, whether by labor, gift or by making profitable use of a franchise previously granted, it is enough if it has become private property. *Monongahela Nav. Co.* v. *United States*, 148 U. S. 312; *Spring Valley Waterworks* v. *San Francisco*, 124 Fed. Rep. 574; *Metropolitan Trust Co.* v. *Houston &c.*, 90 Fed. Rep. 683; *Detroit* v. *Detroit H. & P. Co.*, 43 Michigan, 140; *Brunswick Water Dist.* v. *Maine Water Co.*, 59 Atl. Rep. 540.

Good will or going value should be considered in arriv-

ing at the value of plaintiff's property, upon which it is entitled to earn dividends. Cases *supra* and *National Water Works* v. *Kansas City*, 62 Fed. Rep. 853; *People* v. *O'Brien*, 111 N. Y. 41; *Smyth* v. *Ames*, 169 U. S. 544; *Reagan* v. *Farmers' L. & T. Co.*, 154 U. S. 362, 410; *Ames* v. *U. P. Ry. Co.*, 64 Fed. Rep. 165; *San Diego Water Co.* v. *San Diego*, 118 California, 556; *Fairbank* v. *United States*, 181 U. S. 300; *United States* v. *Gettysburg Elec. R. Co.*, 160 U. S. 668; *Kennebec Water Dist.* v. *Waterville*, 97 Maine, 185; *Water Co.* v. *Newburyport*, 168 Massachusetts, 541; *Water Supply Co.* v. *Gloucester*, 179 Massachusetts, 365; *Bristol* v. *Water Works*, 23 R. I. 274; *Ames* v. *P. R. R. Co.*, 64 Fed. Rep. 178; *Omaha* v. *Water Co.*, 218 U. S. 180.

"Going Value" or "Franchise" should not be discarded because of difficulty in ascertaining its value. *Howe Machine Co.* v. *Bryson*, 44 Iowa, 166; *Richmond* v. *D. & S.*, 40 Iowa, 272; *Chicago Ry. Co.* v. *Tompkins*, 176 U. S. 167, 172.

The franchise is an easement or right of way in the streets, and hence is real property. Cases *supra* and *Milhau* v. *Sharp*, 27 N. Y. 620; *Ghee* v. *Northern Union Gas Co.*, 158 N. Y. 510; *Metropolitan Street R. Co.* v. *State Tax Comrs.*, 174 N. Y. 435; *Water Comrs.* v. *Westchester Waterworks Co.*, 176 N. Y. 239; *Kronbein* v. *Rochester*, 76 App. Div. 494; *Re East River Gas Co.*, 122 App. Div. 890; *Bowman* v. *Wathen*, 2 McLean, 376; *Citizens' St. R. Co.* v. *Detroit*, 64 Fed. Rep. 643; *West River Bridge Co.* v. *Dix*, 6 How. 507; *Gue* v. *Tide Water Canal Co.*, 24 How. 257; *East Alabama R. Co.* v. *Doe*, 114 U. S. 340; *Chicago* v. *Baer*, 41 Illinois, 306; *Stockton Gas & Electric Co.* v. *San Joaquin County*, 148 California, 313. As to the rule in England since the early days of gas lighting see *Railroad* v. *Brighton Gaslight Co.*, 5 Barn. & C. 466.

A corporation cannot be deprived of its franchises except under the power of eminent domain and upon payment of their full value. *Sixth Ave. R. Co.* v. *Kerr* and *Water Comrs.*

v. *Westchester County Waterworks*, 176 N. Y. 239; *Coney Island, Ft. H. & B. R. Co.* v. *Kennedy*, 15 App. Div. 588; *Spring Valley Waterworks* v. *San Francisco*, 124 Fed. Rep. 574; *Monongahela Nav. Co.* v. *United States*, 148 U. S. 312.

The power of the Federal Government to regulate commerce does not authorize it to destroy a franchise of this kind without making just compensation for it. *United States* v. *Bellingham Bay Boom Co.*, 176 U. S. 211; *Monongahela Nav. Co.* v. *United States*, 148 U. S. 312.

Plaintiff's franchise is entitled to the same protection as any other property. *Parker* v. *Elmira C. & N. R. Co.*, 165 N. Y. 274; 59 N. E. Rep. 81; *Railroad Cases*, 116 U. S. 307, 331.

The action of the state court in excluding many items of value was arbitrary and without foundation in the evidence. It is the present value of the plant that should be taken into consideration. Cases *supra*.

Working capital should not have been eliminated in fixing value.

The elements entering into a fair rate to be charged for gas are the actual cost of all labor, materials and immediate repairs necessary to manufacture the gas and place it at the disposal of the consumer. Cases *supra; Reagan* v. *Farmers' Land T. Co.*, 154 U. S. 362; *U. P. Ry.* v. *United States*, 99 U. S. 700; *Southern Pac. Ry.* v. *Board of Com.*, 78 Fed. Rep. 265; *Gas Co.* v. *Memphis*, 72 Fed. Rep. 952; *Clyde* v. *Richmond Elec. Co.*, 57 Fed. Rep. 436.

A reasonable amount must be allowed for depreciation of the plant. *Willcox* v. *Gas Co., supra; Knoxville* v. *Water Co., supra; San Diego Land Co.* v. *National City*, 174 U. S. 739; *Milwaukee E. R. & L. Co.* v. *City*, 87 Fed. Rep. 577; *Brymer* v. *Butler Water Co.*, 179 Pa. St. 231.

Depreciation is due to three general factors. Inadequacy; where by reason of increased demand the machinery or mains, or some parts of them, become too small.

Obsolescence; where by reason of new invention and advancement in the art, the machinery in use can no longer be economically operated; and physical decay.

No ordinance fixing prices charged for a public service is reasonable which, in addition to the foregoing elements, does not allow to the investors a fair return on the money invested in the enterprise, with due regard to the nature and hazards of the business. Cases *supra*.

The earlier leaning of the courts toward the doctrine that the legislative power to fix rates stops only at confiscation has been supplanted by the rule that rates must be reasonable, that is, such as to earn a fair, just and adequate income on the investment. Cases *supra* and *Atlantic Coast Line* v. *Nor. Car. Corp. Comm.*, 206 U. S. 1; *C., B. & Q. Ry. Co.* v. *Chicago*, 166 U. S. 226; *Covington & L. Turnpike Rd. Co.* v. *Sandford*, 164 U. S. 578; *C., M. & St. P. Ry.* v. *Minnesota*, 134 U. S. 418; *Munn* v. *Illinois*, 94 U. S. 141; *Central R. Co.* v. *Railroad Commission*, 161 Fed. Rep. 995; *Southern Pac.* v. *Board*, 78 Fed. Rep. 265; *Allnutt* v. *Inglis*, 12 East, 527; *Des Moines* v. *Water Works Co.*, 95 Iowa, 348; *Water Co.* v. *Cedar Rapids*, 118 Iowa, 234.

The rule that the fair return must not be less than the legal rate of interest is justified on reason and authority. Cases *supra* and *Pennsylvania R. R. Co.* v. *Philadelphia County*, 220 Pa. St. 115; *Chicago Traction Co.* v. *Equalization Board*, 114 Fed. Rep. 561; *Louisville & N. R. Co.* v. *Brown*, 123 Fed. Rep. 951; *Milwaukee Elec. R. & L. Co.* v. *Milwaukee*, 87 Fed. Rep. 585; *Southern P. Co.* v. *Railroad Comrs.*, 78 Fed. Rep. 261; *Jamaica Water Supply Co.* v. *Tax Comrs.*, 128 App. Div. 13; *International Bridge Co.* v. *Canada Sou. R. Co.*, 7 Ont. App. Rep. 226, aff'd L. R. 8 App. Cas. 723.

It is not enough that something is earned for the stockholders. They are entitled to fair compensation. Cases *supra*.

To deprive the plaintiff of a fair and reasonable earning capacity, such as the citizen enjoys, as to his money and as to all types of his property, is to deprive it of the equal protection of the laws. *C., M. & St. P. Ry. Co.* v. *Minnesota*, 134 U. S. 418.

The State may be said to have appropriated the gas plant to public use. For the appropriation it is bound to make a just, fair and reasonable compensation. *Water Co.* v. *San Diego*, 62 Am. St. Rep. 261.

The question as to rate of income is what rate of dividends would induce prudent men to invest in stock of the company representing the real value of the property as a going business. *Willcox* v. *C. Gas Co.*, 212 U. S. 19.

It is proper to apply the prescribed rate to the past experience of the company, taking into consideration the increased cost of operation after the time when the new rate is applied. *Seaboard Air Line Ry. Co.* v. *R. R. Com.*, 155 Fed. Rep. 792.

Annual income of 4.41 on value of property or 3.30 per cent on stock after deducting fixed charges is unreasonably low. The compensation should be for the real substantial value employed, and no legislation can diminish by one jot the rotund expression of the Constitution. *Railroad Co.* v. *Henry*, 8 Nebraska, 170; *Spring Valley Water Co.* v. *San Francisco*, 124 Fed. Rep. 574.

The power to regulate is not the power to destroy, and limitation is not equivalent to confiscation. *C., M. & St. P. Ry. Co.* v. *Minnesota*, 134 U. S. 418; *S. Pac. Ry. Co.* v. *Bd. of Com.*, 78 Fed. Rep. 236.

Whatever the State may do, even with the creation of its own will, it must be in subordination to the inhibition of the Federal Constitution. *Vicksburg* v. *Vicksburg Water Works Co.*, 202 U. S. 453; *Water Co.* v. *Omaha*, 147 Fed. Rep. 7; *S. C.*, 218 U. S. 180; *Railroad Tax Cases*, 13 Fed. Rep. 754.

The state court erred in reducing depreciation to five

cents per M., and in refusing to allow as part of operating expenses the items of interest on bonds and interest on loans. In effect the state court assumed the future earnings of the company would be largely in excess of the amount justified by the evidence and practically held that any return on plaintiff's property is sufficient.

The question as to the competency and legal effect of evidence as bearing upon a question of Federal law is a Federal question. *Dower* v. *Rogers*, 151 U. S. 658; *Mackay* v. *Dillon*, 4 How. 421; *Gelston* v. *Hoyt*, 3 Wheat. 246.

The refusal of the state court to consider a Federal question which is controlling in a case, is equivalent to a decision against the Federal right involved therein. *Des Moines Nav. & R. Co.* v. *Iowa Homestead Co.*, 123 U. S. 552.

It is not necessary that the express language of the opinion should recite that a Federal question has been decided, but it is sufficient for the purpose of the jurisdiction of this court, that the state court by its decisions necessarily adjudicates the defense under the Federal Constitution. *El Paso & N. E. R. Co.* v. *Gutierrez*, 215 U. S. 90; *Wabash R. Co.* v. *Adelbert College*, 208 U. S. 38, 44; *Atchison, T. & S. F. R. Co.* v. *Sowers*, 213 U. S. 15; *Land & Water Co.* v. *San Jose Ranch Co.*, 189 U. S. 179; *Fire Asso. of Philadelphia* v. *New York*, 119 U. S. 110, 120; *Murdock* v. *Memphis*, 20 Wall. 590; *Mallett* v. *North Carolina*, 181 U. S. 589.

The witness was not competent to testify as to cost, depreciation of the plant, or income plaintiff was entitled to earn. *Eastern Tran. Co.* v. *Hope*, 95 U. S. 297; *C., M. & St. P. Ry.* v. *Kellogg*, 94 U. S. 469; *N. Y. E. L. Co.* v. *Blair*, 79 Fed. Rep. 896; *U. P. Ry.* v. *Yates*, 79 Fed. Rep. 584; *Burg* v. *C., R. I. & P. Ry.*, 90 Iowa, 114; *Muldowney* v. *Illinois Central*, 36 Iowa, 473; *Boyle* v. *State*, 57 Wisconsin, 472; 15 N. W. Rep. 827; *Bixby* v. *Ry. Co.*, 105 Iowa, 293; *Dale* v. *Johnson*, 50 N. H. 452; *Mo. Pac.* v. *Finley*, 38 Kansas, 550.

Opinions are never received if the facts can be ascertained and made intelligible to the jury, or if they are such as men in general are capable of comprehending and understanding. Ordinary affairs of life cannot be the subject of expert testimony. Am. & Eng. Encyc. of Law, 2d Ed., Vol. 7, 493; *Graham* v. *Penna. Company*, 12 L. R. A. 293; *Boyle* v. *State*, 57 Wisconsin, 472; 15 N. W. Rep. 827; *N. Y. Elec. Equip. Co.* v. *Blair*, 79 Fed. Rep. 896; *Muldowney* v. *Ill. Cent. Rd. Co.*, 36 Iowa, 473; *C., M. & St. P. Ry. Co.* v. *Kellogg*, 94 U. S. 469; *Kelley* v. *Richardson*, 37 N. W. Rep. 514. See also *Bixby* v. *Railway & Bridge Co.*, 105 Iowa, 293; *Union Pacific Ry. Co.* v. *Yates*, 79 Fed. Rep. 584; *Missouri Pacific* v. *Findley*, 38 Kansas, 550; *Burg* v. *C., R. I. & P. Ry. Co.*, 90 Iowa, 114; *Dale* v. *Johnson*, 50 N. H. 452; *Eastern Transportation Co.* v. *Hope*, 95 U. S. 297.

This court has jurisdiction of the questions raised under the writ of error.

The questions under both constitutional provisions were necessarily involved in the case, and decided adversely to the plaintiff, and it is not necessary that the record should show what errors were relied upon in the Supreme Court of Iowa. *California Powder Works* v. *Davis*, 151 U. S. 389; *Armstrong* v. *Athens Co.*, 16 Pet. 281.

A decision of the Federal question in terms is not essential. If a decision of such question was necessarily involved in the judgment rendered it is not a matter of importance that the state court avoided all reference to the question. *Chapman* v. *Goodnow*, 123 U. S. 540; *Chicago Ins. Co.* v. *Needles*, 113 U. S. 574; *Bell's Gap R. Co.* v. *Pennsylvania*, 134 U. S. 232; *Chicago, B. & Q. R. Co.* v. *Chicago*, 166 U. S. 226; *St. Louis Consol. Coal Co.* v. *Illinois*, 185 U. S. 203.

The record in this case not only discloses that the rights of the plaintiff in error under the Constitution were set up and were expressly denied, but such was the necessary

effect in law of the judgment of the Supreme Court of Iowa. *Appleby* v. *City of Buffalo*, 221 U. S. 524; *Sayward* v. *Denny*, 158 U. S. 180, 183; *Harding* v. *Illinois*, 196 U. S. 78; *Waters-Pierce Oil Co.* v. *Texas*, 212 U. S. 86, 97.

This court in an action at law has no jurisdiction to review the decision of the highest court of the State upon a pure question of fact, although a Federal question would or would not be presented according to the way in which the question of fact was decided. *Lewis* v. *Campau*, 3 Wall. 106; *Hall* v. *Jordan*, 15 Wall. 393; *Boggs* v. *Merced Min. Co.*, 3 Wall. 304; *Carpenter* v. *Williams*, 9 Wall. 785; *Crary* v. *Devlin*, 154 U. S. 619; *Republican River Bridge Co.* v. *Kansas Pac. Rd. Co.*, 92 U. S. 315; *Martin* v. *Marks*, 97 U. S. 345; *Quimby* v. *Boyd*, 128 U. S. 488; *Dower* v. *Richards*, 151 U. S. 558.

But in a suit in equity in which a trial was had *de novo* in the state Supreme Court, the facts will be reviewed by this court. *Mackay* v. *Dillon*, 4 How. 421; *Almonster* v. *Kenton*, 9 How. 1, 7; *Morland* v. *Page*, 20 How. 522; *Dower* v. *Richards*, 151 U. S. 658; *Pennsylvania Mutual Life Ins. Co.* v. *Austin*, 168 U. S. 685; *Republican River Bridge Co.* v. *Kansas Pac. Rd. Co.*, 92 U. S. 318.

Mr. James W. Jamison and *Mr. William Chamberlain*, with whom *Mr. John M. Redmond* was on the brief, for defendants in error.

Mr. Justice Holmes delivered the opinion of the court.

This is a bill brought by the plaintiff in error to restrain the enforcement of an ordinance fixing ninety cents per thousand cubic feet as the highest price to be charged in Cedar Rapids for gas. As the ordinance was passed in 1906 and had not yet been enforced, the Supreme Court of the State dismissed the bill without prejudice to a later suit after it should have been given a fair test. 144 Iowa,

426. The plaintiff, having specially set up that the ordinance violated the contract clause of the Constitution, (Art. I, § 10), and the Fourteenth Amendment, brings the case here. There is a motion to dismiss, but the constitutional questions appear upon the record and are not so frivolous as to warrant that summary course.

The supposed contract arises from a term in the ordinance under which the plaintiff was granted a renewal of its franchise in 1896. By § 3, "in consideration of the privileges herein granted to said company, it shall furnish to the inhabitants of said city gas for lighting at a price not to exceed $1.80 per thousand feet and 20 cents per thousand cubic feet discount if consumers pay on or before the 10th of each month after consumption," &c. It is admitted that under the laws of Iowa the rate could be changed by the city, but it is argued that the quoted words import a contract that it shall not be changed to such an extent as to make impossible the offer of a discount for prompt payment; that being the cheapest and most efficient way of collecting the price of the gas. The state court assumed that there was no contract in the case, and in discussing what it treated as the sole question, whether the plaintiff would be deprived of a fair compensation for its services, pointed out that the company could secure payment by requiring a deposit in advance or by making other reasonable rules.

We are of opinion that there was no contract on the part of the city that the price should be kept high enough to allow a discount for prompt payment. The general power reserved to regulate rates was limited only by the Fourteenth Amendment. The words relied upon by the plaintiff express its promise in consideration of the privileges granted, not a promise by the city. *Knoxville Water Co.* v. *Knoxville*, 189 U. S. 434, 437. It is true that the contract was in the form of an ordinance, but the ordinance was drawn as a contract to be accepted and it was ac-

cepted by the plaintiff; it contained reciprocal undertakings, the one in question being that of the plaintiff, as we have said; and it was subject to the power retained by the city to regulate rates. That power, it was expressly provided by the Iowa statute, was not to be abridged by ordinance, resolution or contract. Code of 1897, § 725, 22 G. A. (1888) ch. 16.

Upon the issue under the Fourteenth Amendment, the plaintiff argues on the strength of Rev. Stat., § 709, that the facts are open to reëxamination here. By that section it is provided that a writ of error to a state court "shall have the same effect as if the judgment or decree complained of had been rendered or passed in a court of the United States." It is argued that as the decree of a state court can be reviewed only by writ of error the foregoing words give to a writ of error in a chancery case the effect of an appeal and open the evidence to reëxamination to the same extent as upon an appeal. A suggestion to that effect was made in *Republican River Bridge Co.* v. *Kansas Pacific Ry. Co.*, 92 U. S. 315, 317, but the practice and decisions from an early date have been the other way. *Egan* v. *Hart*, 165 U. S. 188, 189. *Almonester* v. *Kenton*, 9 How. 1, 7. *Dower* v. *Richards*, 151 U. S. 658, 663. *Gardner* v. *Bonestell*, 180 U. S. 362, 365, 370. *Thayer* v. *Spratt*, 189 U. S. 346, 353. *German Savings & Loan Society* v. *Dormitzer*, 192 U. S. 125, 129. *Adams* v. *Church*, 193 U. S. 510, 513.

But of course findings either at law or in equity may depend upon questions that are reëxaminable here. The admissibility of evidence or its sufficiency to warrant the conclusion reached may be denied; or the conclusion may be a composite of fact and law, such as ownership or contract; or in some way the record may disclose that the finding necessarily involved a ruling within the appellate jurisdiction of this court. Such questions properly saved must be answered, and, so far as it is necessary to examine

the evidence in order to answer them or to prevent an evasion of real issues, the evidence will be examined. *Kansas City Southern Railway Co.* v. *Albers Commission Co.*, decided February 26, 1912, *ante*, p. 573. For instance in this case the finding of the court that it was not prepared to say that a ninety cent rate was confiscatory may perhaps be taken to have been made subject to the admission that the rate was too low to permit a discount for prompt payment, and if so opens the question whether it was not confiscatory on that account, as matter of law. The plaintiff presents a number of such objections to the decision of the court below, although confused with arguments on pure matter of fact.

It would require a very clear case to warrant the reversal of the decree of a state court which though final in form merely postpones a decision upon the merits for further experience. The present one is far from being such a case. To refer in the first instance to the point just mentioned, we cannot say as matter of law that at ninety cents a thousand feet the company will be unable to collect payment without losses that will amount to a taking of its property. Then again, although it is argued that the court excluded going value, the court expressly took into account the fact that the plant was in successful operation. What it excluded was the good will or advantage incident to the possession of a monopoly, so far as that might be supposed to give the plaintiff the power to charge more than a reasonable price. *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19, 52. An adjustment of this sort under a power to regulate rates has to steer between Scylla and Charybdis. On the one side if the franchise is taken to mean that the most profitable return that could be got, free from competition, is protected by the Fourteenth Amendment, then the power to regulate is null. On the other hand if the power to regulate withdraws the protection of the Amendment altogether, then the prop-

erty is nought. This is not a matter of economic theory, but of fair interpretation of a bargain. Neither extreme can have been meant. A midway between them must be hit.

In this case the court fixed a value on the plant that considerably exceeded its cost and estimated that under the ordinance the return would be over 6 per cent. Its attitude was fair and we do not feel called upon to follow the plaintiff into a nice discussion of details. We perhaps should have adopted a rule as to depreciation somewhat more favorable to the plaintiff, or, it may be, might have allowed this or that item that the state court struck out, but there is nothing of which we can take notice in the case that could warrant us in changing the result or in saying that the plaintiff did not get as much as it could expect when leave was reserved for it to try again.

Decree affirmed.